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OF THE OKLAHOMA STATE MEDICAL ASSOCIATION

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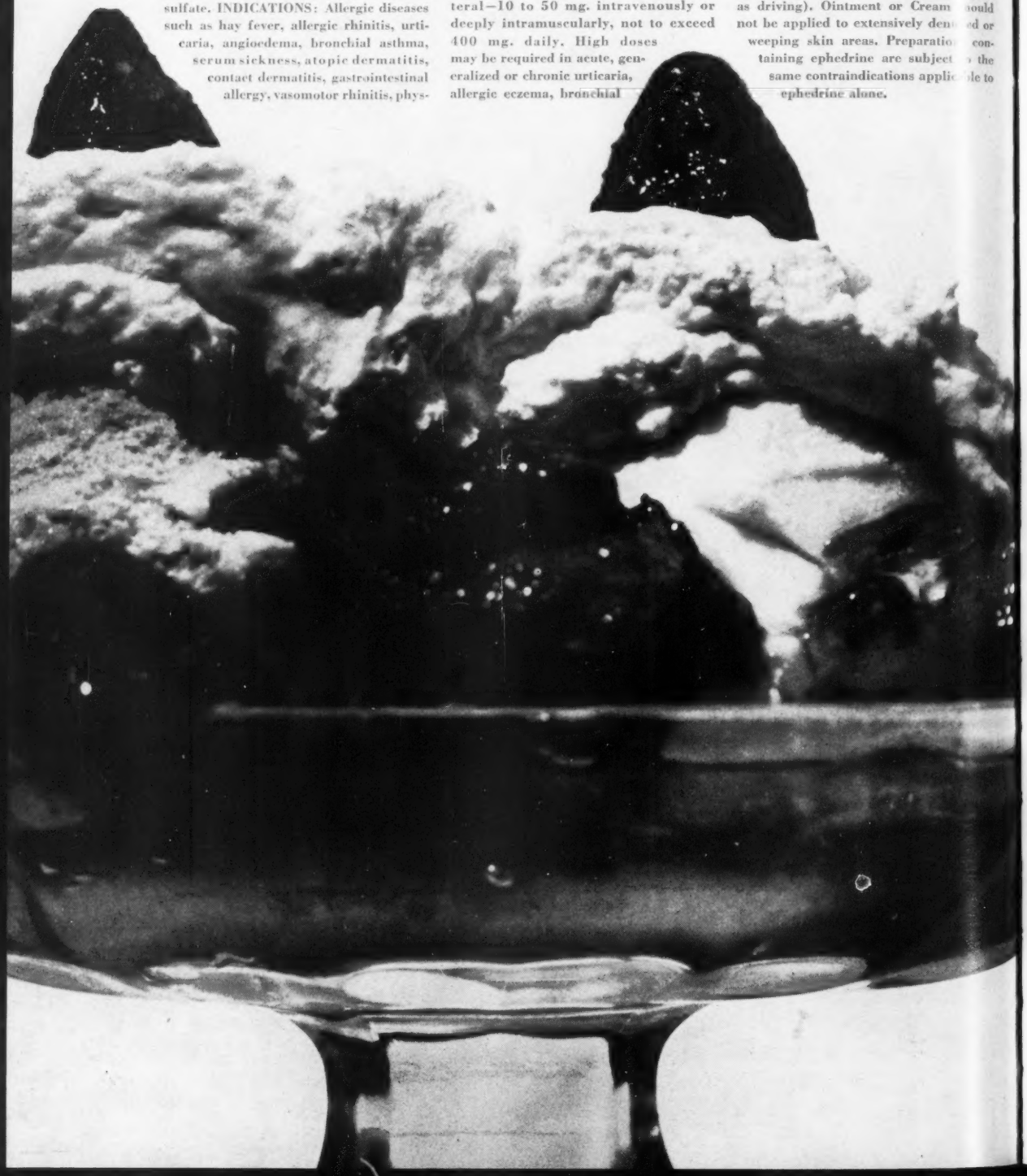
ORGANIZED MEDICINE:

Voluntary Self-Government

BENADRYL Hydrochloride (diphenhydramine hydrochloride, Parke-Davis). Kapseals® of 50 mg.; Capsules of 25 mg.; Emplets® (enteric-coated tablets) of 50 mg.; in aqueous solutions: 1-cc. Ampoules, 50 mg. per cc.; 10- and 30-cc. Steri-Vials,® 10 mg. per cc. with 1:10,000 benzethonium chloride as a germicidal agent; Elixir, 10 mg. per 4 cc.; 2% Ointment (water-miscible base); Kapseals of 50 mg. BENADRYL HCl with 25 mg. ephedrine sulfate. INDICATIONS: Allergic diseases such as hay fever, allergic rhinitis, urticaria, angioedema, bronchial asthma, serum sickness, atopic dermatitis, contact dermatitis, gastrointestinal allergy, vasomotor rhinitis, physical allergies, and allergic transfusion reactions, also postoperative nausea and vomiting, motion sickness, parkinsonism, and quieting emotionally disturbed children. Parenteral administration is indicated where, in the judgment of the physician, prompt action is necessary and oral therapy would be inadequate. DOSAGE: Oral—adults, 25 to 50 mg. three or four times daily. Children, 1 or 2 teaspoonfuls of Elixir three or four times daily. Parenteral—10 to 50 mg. intravenously or deeply intramuscularly, not to exceed 400 mg. daily. High doses may be required in acute, generalized or chronic urticaria, allergic eczema, bronchial asthma, and status asthmaticus. PRECAUTION: Avoid subcutaneous or perivascular injection. Single parenteral dosage greater than 100 mg. should be avoided, particularly in hypertensive and cardiac disease. Products containing BENADRYL should be used cautiously with hypnotics or other sedatives; atropine-like effects are undesirable; if the patient engages in activities requiring alertness or rapid, accurate response (such as driving). Ointment or Cream should not be applied to extensively denuded or weeping skin areas. Preparations containing ephedrine are subject to the same contraindications applicable to ephedrine alone.



Editorials

Inflation and Medical and Hospital Care

Doctor Annis did a splendid job against Walter Reuther in their debates on CBS. He presented medicine's point of view brilliantly and from what seemed a better background of knowledge than had Mr. Reuther. Nevertheless the controversy still rages and how the ball will bounce is yet unknown. Some consideration should be given to exploration of mechanisms if it bounces the other way. The availability of money is not enough.

It has been said and thought many times that the number of dollars that one plans for his retirement income is no hedge against inflation—that one needs something whose relative value goes up with a decreasing purchasing power of the dollar.

The only real hedge against the rising cost of hospital care in Oklahoma both for the man and his family and the hospitals is our Blue Cross service contract. Here the family is not dealing with dollars—Blue Cross has not agreed to supply him with dollars but has agreed through the hospitals to obtain for him the hospital care that he requires. This is possible because Blue Cross has also developed a means of protecting the hospitals by paying them a per diem which is based on the hospital's per diem cost. This is, of course, why it has been necessary for Blue Cross to increase its rates from time to time and why over utilization has caused the county rating program to be instituted. The small increases necessary to protect both the patient and the hospital against inflation is providing a service beyond compare and cannot in any other way with which I am familiar be duplicated.

Both the man and his family and the doctor would be similarly protected had we a Blue Shield service contract for medical care. Our dollar allowances from Blue Shield are now being gone over by the Association's Liaison Committee and Blue Shield. These are dollars, no services, and are no protection to either the patient or the doctor against inflation. A help, yes—but nothing really predictable far down the road for the doctor and nothing has ever been predictable for the man and his family except so many dollars toward his doctor's bill.

If this can be done for people and hos-

(Continued on Next Page)

COVER: *Time for the Truth*

Is organized medicine a selfish, "domineering trust"—a classic example of "autocratic rule"—a "negativistic stumbling block" in the path of American progress? Or is it really an exemplary system of **voluntary** self-government, which should be given its due as a unique, humanitarian American institution?

As physicians, we may honestly and proudly proclaim the latter as the correct definition!

American medicine is now under attack. The motivation of the AMA and its constituent societies crops up as a recurring argument, designed by our opponents to smoke-screen the real issues. Moreover, these articulate aggressors allege that the AMA's "wrong-doings" are dictated by a few bureaucrats, and are not representative of the rank and file medics. A concerted effort is being made to discredit us!

Let's set the record straight: first in our own minds, if necessary; then in the public's.

The physicians of this nation need not apologize for their individual or collective contributions to the health of the American people. With organized medicine as its architect, America's health care system is the world's unchallenged leader.

As to the charges of autocratic rule, any organization, governmental or otherwise, would be hard put to prove the same degree of unanimity which has always been present in the grass-roots democracy of organized medicine. Nearly one-fourth of the OSMA membership has a direct hand in policy-making, and the balance has the opportunity.

Let the socialistic planners anguish at our self-governing existence—but do not let them discredit our accomplishments and run roughshod over the rights of the people and the freedom of the profession!

pitals in Oklahoma, is there any reason why it cannot be done on a National level? The President's program for recipients of social security applies to hospital care, not medical care. If we permit this thing to end up with so many dollars for hospital care regardless of who dishes them out or what hospital gets them, we have no ability to learn from experience, and the hospitals will end up as we ultimately will with their hands out to government.

It is up to every one of us to protect the patients' medical future and the hospitals by using hospitals for Blue Cross patient care only when necessary and for no longer than is necessary. The very substantial hedging against inflation that both now have depends on it. We are playing for keeps, let's at least try to get in on the planning if the President's program becomes law. If so, we will have a little time to work out a service program for medical care that will offer the same predictable assurance to the people and ourselves as does Blue Cross to the people and the hospitals.

The Oklahoma Hospitals and D.P.W.

It is regrettable that a hassle has developed between the Hospital Association and the Department of Public Welfare over payments to hospitals for care of old age recipients of public assistance. Here, too, the welfare department has protected the hospitals against inflation by paying the per diem cost of the University Hospitals less a percentage for the cost of teaching as an arm of the School of Medicine. Several things seem important to me in this controversy which need to have the proper weight attached.

1. In asking government to pay full cost for hospitalized patients who are in the category of assistance without genuine consideration for the other needs that must be met for these people and the amount of money that is available to meet these needs, are we not throwing in the sponge and asking government to use its taxing power to socialize hospital care.

2. Are we thinking straight when we regard people on old age assistance as indigents and as wards of the state? Is it not just the group that is indigent and a charge of the state whereas the individual known to us or the relative is a fine old person who has been a good citizen and is entitled to his pension? I support the latter view and believe that the peace of mind that goes with a monthly income and the pooling of their funds for medical care is just as important to their health and welfare as are beans and potatoes.

3. The patients involved are people who have only about $1.00 per day with which to buy food.

4. The State has no family responsibility law.

5. The allowance for care is considerable even though not as adequate toward meeting costs as the hospitals would like.

6. It has been tied to the University Hospitals cost and in this way will fluctuate with costs as is apparent from the fact that the per diem has gone up from $15.00 per day to $20.93 per day in less than four years.

7. Blue Cross has been very liberal in letting the hospitals figure their costs because the plan feels that its contract holders are private patients and as such must help in defraying the cost of caring for those not quite able to manage as do other private paying patients. Perhaps some of the Hospital Association's thinking in the matter has been conditioned by the attitude of Blue Cross.

8. The hospitals have been permitted to collect insurance and from relatives, a privilege which is, I think, denied in other states. The only restriction is that they are not allowed to bill the patient himself.

Since we the physicians are the people who admit and discharge patients from the hospitals, much of the responsibility for conserving the funds in both Blue Cross and the Welfare Department so that they can do what they are intended to do rests on us. If we realize this, a concerted effort by each of us can go a long way toward making this pooling technique an effective, solvent, and satisfactory way of continuing to provide hospital care by a means that assures care whatever may be the purchasing power of the dollar.—*B.H.N.*

Letter to the Editor

The following letter on the subject discussed in the preceding editorial was received from Mark Johnson, M.D. Doctor Johnson is Secretary-Treasurer of the Association and Chairman of its Council on Socio-Economic activities. He has served on the Department of Public Welfare and as Chairman of the Association's Welfare Committee.

To the Editor
Journal of the
Oklahoma State Medical Association

Dear Sir:

In preparing and distributing its brochure entitled "Financing Hospital Care in Oklahoma Hospitals for Those Unable to Pay," The Oklahoma Hospital Association has achieved a new pinnacle of crassness. The basic objectives of the brochure are selfish and short-sighted. To promote total supplantation of personal, family and local community responsibility in the care of medically indigent persons is to promote socialism in its pure raw and repugnant form.

Standing as the prime example of the puerile logic which afflicts the entire pamphlet is this statement:

" . . . Generally a physician's charitable work involves *only** a voluntary sacrifice of his professional services and time. On the other hand hospital care involves services of salaried employees and services and materials which the hospital must pay for."

If it were not so manifestly ridiculous such an evaluation of the physicians' contributions to the indigent sick would represent a monumental insult. Such a statement is so barren of reason and understanding that it seems silly to challenge it. However as incredible as it may seem there are some (apparently influential) members of the Oklahoma Hospital Association who feel that any fee paid to physicians represents "pure gravy." These individuals refuse to acknowledge the fact that the physician's contributions also involve ". . . services of salaried employees and services and material which the . . ." physician must pay for. No consideration is given to the fact that the medically indigent patients in the hospitals are cared for prior to their admission and will be cared for subsequent to their discharge from the hospital by a physician who will in all probability receive little or no remuneration for the months of care rendered.

Apparently certain hospital administrators view the contributions of time made by staff physicians as they view free air and water at a service station. No amount of reasoning will make them appreciate the fact that an hour of time donated by the physician is also an hour of rent, and an hour of utilities, and from two to six hours of salaried employee's time. In addition to these significant expenses, of course, there is the matter of transportation to and from the hospital which is provided by the physician and at his expense.

Such an illogical and unfair evaluation of the physician's services would be disappointing regardless of its source; that it was conceived and publicized by the Oklahoma Hospital Association is unbelievably shocking.

Throughout the narrative in the brochure there is a tone which seems to imply that hospitals render care which is totally independent of physicians' services. It speaks of a "medical work-up," a "physical build-up," as though these things were achieved by the hospital itself. It comments that "the hospitals furnish nursing care . . . a detailed record of the patients' medical history and hospital stay . . . x-ray tests and treatments . . ." as though they were outgrowths of the walls and ceilings of the hospital and fell like ripened fruit into the patient's lap.

How primitive it is to find it necessary to point out that hospitals provide only tools and facilities for medical care and nothing else. Nursing care is provided by nurses. X-ray machines, laboratory and diagnostic equipment become therapeutic tools only in the hands of the physicians who staff the hospitals. Medical records are created by physicians and nurses, not by hospitals.

Unproductive instruments are sometimes used in the treatment of diseases and injuries. In most instances they represent tools which are constructed and provided not only voluntarily but eagerly by

*Italics mine.

communities and churches. Only a few ill advised groups ever ventured into the provision of a hospital with a profit motive; repeated economic calamities have almost totally discouraged such motivation. Obviously the Catholics, the Presbyterians, the Baptists, the residents of Citizenville did not expect a dollar profit from their hospitals. Indeed I am convinced they looked upon each hospital as a dollar-wise expense and felt that the profit was richly returned in Christian service and human securities. Now, however the Oklahoma Hospital Association not only seeks but is virtually demanding a guaranteed balanced budget. And the most appalling feature of their demand is that it is being made of the taxpayer not directly but through a welfare agency.

One cannot but wonder if the objectives portrayed by the Oklahoma Hospital Association truly represent the philosophies of their individual boards of directors and trustees. Certainly they cannot represent the convictions of their professional staffs. For if it is right and just and good for Oklahoma taxpayers to buy up all the family responsibility, all the community pride and all the Christian spirit in caring for the medically indigent, it is just as right for the federal taxpayers to do the same thing on a national scale. In short it is justification for the total socialization of hospitals throughout the United States.

And if the Hospital Association should accomplish such objectives we can rest assured that some administrator will recall that "physician's charitable work involves *only** a voluntary sacrifice of his professional services and time . . ." and suggest, as a casual afterthought, that we should be subsidized also.

*Italics mine.

MEDICS IN DEFENSE

Treatment Principles for Disaster Emergency Medical Care

If maximum care is to be provided to the greatest number of mass casualties under the conditions of austerity that are expected to prevail following an all-out attack, it is imperative that:

1. Treatment procedures and principles at all levels be designed to result in the greatest good to the greatest number within the means available.
2. Treatment procedures in disaster and support areas be simplified and standardized.
3. The control of hemorrhage, the attainment and maintenance of a patent airway and the treatment of shock are the critically essential life-saving measures that receive the highest priority at all levels.
4. During the emergency period following a mass attack on the United States, no treatment procedure should be performed that renders a casualty less able to care for himself.
5. Treatment procedures be designed to preserve life over limb and function over appearance.
6. Casualties requiring only self-aid, first aid or out-patient care will be treated as indicated in disaster or support areas, while admission to hospitals must be reserved for more seriously ill patients.
7. Psychologically disturbed individuals should not be admitted to hospitals treating the injured.
8. No patient should be removed from his litter or improvised stretcher until he has reached a place of definitive treatment or removal is otherwise essential.
9. Similar types of cases should be grouped to the extent practicable to simplify, standardize and expedite treatment.
10. Medical laboratory procedures should be held to the absolute minimum.
11. X-ray examinations should be held to the absolute minimum.
12. Blood typing of casualties should be carried out prior to transfusion and cross-matching should also be carried out, if practicable.
13. Casualties should be transferred to convalescent facilities or discharged and treated on an out-patient status as early as possible.

Dilantin is the second ranking drug for producing intoxication. It must be given with caution and written instructions regarding its administration.

Diphenylhydantoin Sodium (Dilantin®) Intoxication in Children

LUCIUS WAITES, M.D.

THOMAS O. NICKLAS

Since graduating from the University of Tennessee College of Medicine in 1947, Lucius Waites, M.D., has been certified by the American Board of Pediatrics. He is Assistant Professor of Pediatrics and Neurology at the University of Oklahoma School of Medicine.

Thomas O. Nicklas is a third year medical student at the University of Oklahoma School of Medicine and trainee, USPHS Grant, No. 2B-5266.

DIPHENYLHYDANTOIN SODIUM (Dilantin) is a drug that has been used effectively for certain major convulsions (grand mal) since 1938. Recent experience has focused our attention on the unusual number of children with evidence of toxicity from this drug. It is not known at this time if certain children are unusually sensitive to this drug, or if toxicity is always produced by an overdosage. It has become obvious that caution must be employed in prescribing this drug for children.

There have been nine patients admitted to Children's Memorial Hospital because of Diphenylhydantoin Sodium (Dilantin) intoxication since July 1, 1958. Dilantin ranks second only to aspirin intoxication in Children's Memorial Hospital, as there were fifteen patients with aspirin intoxication admitted to the hospital during the same period of time. Phenothiazine-derivative intoxication prompted eight admissions during these months.

Dilantin Intoxication

A review of the records of patients with Dilantin intoxication reveals the youngest patient to be two years of age and the oldest patient to be thirteen years of age.

Six patients received an over-dosage of Dilantin because the physician prescribed too much medication. One patient was given intoxicating dosage because of an incorrectly filled prescription. In one patient a combination of factors, i.e., an incorrectly filled prescription and misunderstanding by the mother, resulted in too much medication. One two-year-old child accidentally ingested a large quantity of Dilantin suspension.

Symptoms of Intoxication

The most common symptoms in our group of patients were unsteadiness, nausea and extreme irritability. Other symptoms in order of their frequency were vomiting, slurring of speech and apathy. Symptoms which

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must be kept in mind in Dilantin intoxication are dizziness, fatigue, hallucinations and delusions, insomnia, ocular pain, skin rash, and unusual emotional lability. The best clinical description of the emotional lability of a child with Dilantin intoxication is that the child's actions resemble an adult moderately inebriated with alcohol.

Signs of Intoxication

The most common signs in our experience were truncal ataxia, incoordination of the extremities, and tremors. Extreme emotional lability was a common sign. Anorexia and vomiting were also prominent, and other clinical evidences were hypertrophied gingiva, dermal eruptions, eosinophilia, ptosis, nystagmus, diplopia, slurring of speech and hypotonia.

Leukopenia is always mentioned as a prominent sign of Dilantin intoxication, but this finding was not present in any of the patients in this series.

Dosage

The authors suggest that phenobarbital tablets in appropriate dosage be given for all convulsions in children regardless of the characteristics of the attacks. Then, appropriate adjunctive therapy is given in regulated dosage in addition to the phenobarbital tablets. Consequently, Dilantin is considered adjunctive therapy in children so that smaller doses may be given and toxicity prevented.

The optimal dosage of Dilantin is the smallest amount that will effectively control the convulsions without producing symptoms and signs of intoxication. The dosage, therefore, cannot be given in relation to body weight or body surface area. The amount of the drug which produced intoxication in our patients varied from 150 mgm/24 hr. to 1200 mgm/24 hr. (The above amounts are equivalent to 15 mgm/kilogram body per day to 66 mgm/kilogram/body weight per day.) The severity of the signs of intoxication did not necessarily increase with larger dosage. Hypertrophy of the gums is not a contraindication to continued therapy, but other signs listed are sufficient evidence to discontinue medication.

We have had no experience with parenterally administered Dilantin in children. Reports in the literature indicate that extreme caution must be employed in the use of parenteral Dilantin (references 1 and 2).

Summary

Dilantin may be used as adjunctive therapy in children with some major convulsions (grand mal). It must be given with caution, and it is suggested that the mother of the child be given written instructions regarding schedule and dosage. Any unusual reaction in the child should be reported to the physician immediately.

Experience with Dilantin intoxication for the past thirty months in Children's Memorial Hospital is presented.

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Lucius Waites, M.D.
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Missile type lawn mower injuries frequently are difficult to treat and tend to cause disability. Three cases are presented.

Rotary Lawn Mower Injuries*

THOMAS H. HENLEY, M.D.

In 1950, Thomas H. Henley, M.D., graduated from the University of Oklahoma School of Medicine where he is now serving his third year residency in General Surgery.

ROTARY power lawn mowers continue to be a serious cause of bodily injury. Reports in the medical literature and our experience at the University of Oklahoma Medical Center indicate an increase in the frequency of missile-type injury. McClure[1] reports on a survey conducted in Georgia in which 794 power lawn mower injuries were recorded by 226 physicians. However, only 43% of the doctors receiving questionnaires returned them. Objects thrown by the blades of the mower caused 30% of the injuries. Eye injuries constituted 16.2% of this latter group. Of the total injuries, 9.3% developed some complication and 14.1% had permanent disability. Butterworth[2] reports a serious head injury with resulting convulsions in a fourteen month female, who was injured when a lawn mower blade struck a solid object, which ricocheted and struck her. He estimates that there were fifty thousand rotary power lawn mower injuries in the United States in 1956. McClure[3] thinks that there are three major causes for such injuries. These are as follows: 1) Faulty design of mowers with poorly guarded moving parts and without sufficient marking of danger areas. 2) Carelessness on the part of the operator. He suggests that detailed instructions in use of the mowers should be given by the retailers. 3) Missiles: These injuries could be prevented by having safely constructed machines and by clearing all debris from the mowing area. In Oklahoma, no accurate account of the number of such injuries is possible since they are not recorded or coded as lawn mower injuries and most of them are treated in emergency rooms or in doctors' offices. In the *Oklahoma State Medical Journal*[4] one missile-type injury was reported. The following three cases are representative of the cases seen at University Hospitals since publication of the last report.

*From the Department of Surgery, University of Oklahoma Medical Center, Oklahoma City, Oklahoma.

Case I

History: This patient was an eighteen year old, colored male who was in good health until the morning of August 27, 1960 when he was mowing the lawn with a rotary power lawn mower. The mower made a noise as though it had hit something and, at the same instant, the patient suffered an excruciating abdominal pain which caused him to fall to the ground. He did not become unconscious and had minimal bleeding. There was no nausea or vomiting and the urine was free of gross blood. He was immediately taken to the Emergency Room at the University Hospital.

Physical Examination: Revealed a well developed, well nourished colored male with severe abdominal pain. Blood pressure was 110/75 mm Hg, pulse 88 per minute and regular, respiration 18 per minute. The heart and lungs were clear. There was a two

centimeter laceration of the skin in the left upper quadrant of the abdomen just above the umbilicus. There were no palpable masses or viscera in the abdomen. There was tenderness to palpation throughout the right side of the abdomen, particularly in the right upper quadrant near the midclavicular line just below the right costal margin. There was no rebound tenderness. Rectal examination was negative.

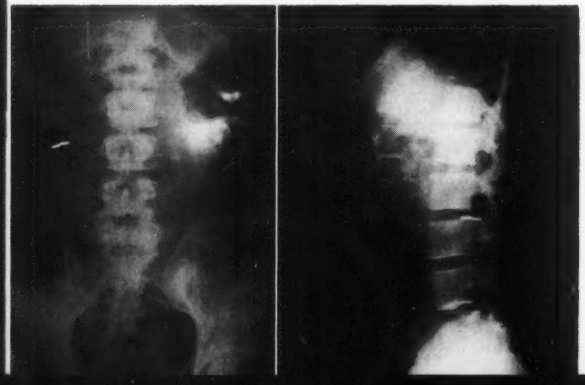
Laboratory Data: On the day of admission the hemoglobin was 16.3 grams, hematocrit 44%, urinalysis was normal. X-rays of the abdomen disclosed a foreign body lying in the vicinity of the right kidney (figures 1 and 2).

Hospital Course: Under general anesthesia exploratory laparotomy was performed. Approximately one liter of blood was present in the peritoneal cavity, pelvis and lesser omental bursa. There was a hematoma of the gastrocolic omentum that measured 10 x 4 x 4 cm.; a perforation of the posterior wall of the stomach measuring 2 millimeters in diameter, and another, of similar size, at the edge of the greater curvature of the stomach. There was a retroperitoneal hematoma in the region of the mesentery of the hepatic flexure of the colon and lateral leaf of the mesentery of the small bowel. There was also a retroperitoneal hematoma, medial and superior to the right kidney, which reached to the loop of the duodenum. The hematoma was resected and the perforations of the stomach closed with -0000- purse-string silk sutures. The remaining mesentery of the transverse colon was sutured to the wall of the stomach, closing the lesser omental bursa. Blood and fluid were aspirated from all gutters and cavities of the peritoneum. The abdomen was closed with -00-, -000-, and -0000- silk sutures. Following operation, the patient's temperature rose to 100.4 degrees on the fourth postoperative day and he was afebrile by the sixth postoperative day. His Levin tube was removed on the second postoperative day. Penicillin and streptomycin were administered twice daily during his hospital stay. He was discharged on the eleventh postoperative day.

Follow Up: This patient returned three weeks postoperatively with cramping abdominal pain increasing in severity. There was no nausea or vomiting. A diagnosis of mechanical intestinal obstruction was made. The patient's abdomen was surgically explored. A partial wound dehiscence containing an adherent loop of obstructed small bowel was found. The adhesions were lyzed, the wound was closed, and the patient's postoperative course was uneventful. He was discharged ten days after admission.

CASE I

Fig. 1 Fig. 2



Case II

History: A 6 year-old-male child was standing approximately 18 feet from a rotary power lawn mower, which was being operated by someone else, when an object, thought to be a rock, was thrown from the mower. The child sustained a deep, penetrating wound in the lower posterior medial aspect of the right upper arm. He was brought immediately to the Emergency Room at the Children's Memorial Hospital.

Physical Examination: The positive physical findings were limited to the right upper extremity. There was a deep, gaping 5 centimeter wound approximately 3 centimeters above the right medial humeral condyle. Examination of the arm revealed definite ulnar nerve involvement. The child was unable to abduct or adduct his fingers. There was hypesthesia of the fourth and fifth fingers.

Laboratory Data: Complete blood count and urinalysis were normal. X-ray examination of the right arm revealed no fracture or dislocation.

Hospital Course: The patient was given three thousand units of tetanus antitoxin after skin testing, 0.5 cc of tetanus toxoid, streptomycin 0.2 grams twice daily, and Achromycin 250 mgm. three times daily. The wound was explored surgically and revealed complete division of the triceps mus-

cle and ulnar nerve. The wound was irrigated thoroughly with septisol and saline. The ends of the nerve were approximated with interrupted -000000- silk sutures, placed in the perineural sheath. The skin edges were debrided and the skin closed with interrupted -0000- silk sutures. The arm was placed in an anterior posterior splint with the metacarpal-phalangeal joints extended and the distal phalanges flexed in a position of function. The postoperative course was uneventful and the child was discharged on the second postoperative day on Achromycin 250 mgm. three times daily. Two weeks later, the child was seen in the Surgery Clinic and the wound was healed without infection. The prognosis is poor for such ulnar nerve injuries.

Case III

History: On the afternoon of 7-3-60, at approximately 6:00 p.m., the patient was mowing grass with a power mower. He walked away from the mower while it was running. At that moment something struck him in the chest and knocked him down. He then noted blood on the left upper chest. He was taken to Ada, Oklahoma, where roentgenograms revealed a small piece of metal in the left middle lung field. He was referred to the University Hospital.

Physical Examination: Pulse was 130 per minute, blood pressure was 120/70 mm Hg, the respiratory rate was 36 per minute, temperature was 98.6 degrees Fahrenheit. The patient was a well developed, well nourished, apprehensive white male in no acute distress. There was a one centimeter laceration over the left second intercostal space, lateral to the left midclavicular line. The heart and lungs were otherwise normal. The rest of the physical examination was within normal limits.

Laboratory Data: Urinalysis was normal. Hemoglobin 13.0 grams%, hematocrit 42%, WBC 8,750 with 34 neutrophils, 64 lymphocytes, 2 monocytes. Roentgenograms of the chest showed a 7-8 millimeter metallic density in the left lung field at the level of the seventh rib posteriorly. The metallic density was seen in the mid-lung field on the lateral views. There was no evidence of either pneumothorax or hemothorax. There was a slight infiltration noted around the metallic density. Subsequent films revealed subsidence of the infiltration (figures 3 and 4).

Hospital Course: The patient was given 0.5 cc tetanus toxoid since he had previously been actively immunized. He was given procaine penicillin 600,000 units intramuscularly every six hours and streptomycin 0.5 grams every twelve hours. The patient had a temperature of 100 degrees orally on the first day of admission. This returned to normal on the third day. He was discharged on oral penicillin on the fifth hospital day. He was seen on 7-24-60 in the Surgery Chest Clinic at which time the temperature was normal and the lungs were clear. The x-ray was described above. The patient is still being followed in the clinic.

Summary

This is a follow up report on missile-type power lawn mower injuries. Three cases from the University of Oklahoma Medical Center are reported. Although injury due to contact with the blade of the power lawn mower is more common than injury due to missiles, it is apparent that the missile injury is more serious and more difficult to treat. This type of injury is already a serious problem, and may become more frequent with increased use of power lawn mowers. Practicing physicians can help to combat this problem by alerting patients to the danger involved in using these mowers. It would also be helpful if a survey of the incidence of this type of injury in the State of Oklahoma was conducted, perhaps by the Oklahoma State Department of Health.

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800 N.E. 13th, Oklahoma City, Oklahoma

CASE III

Fig. 3

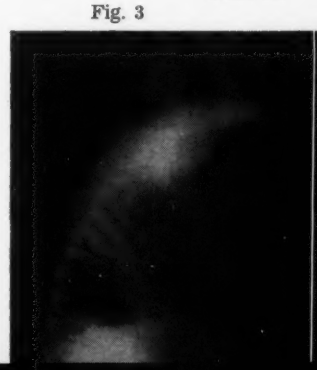

Fig. 4

CLINICAL PATHOLOGIC CONFERENCE

Veterans Administration Hospital

December 22, 1959

Edited by W. O. Smith, M.D., Assistant Professor of Medicine, University of Oklahoma School of Medicine.

Guest Discussant: *Isadore Snapper, M.D., Visiting Professor and Consultant, is Director of Medicine and Medical Education, Beth El Hospital, Brooklyn, New York.*

THE PATIENT was a 62 year old white male automobile mechanic who was first admitted to the Oklahoma City V. A. Hospital on November 14, 1955, because of cough, chills and profuse diaphoresis for two months. Two months before admission he developed an upper respiratory infection characterized by cough, chills and fever which failed to resolve promptly despite the administration of penicillin for two weeks by his physician. He continued to cough and feel weak and lost 16 pounds of weight during the ensuing two months. Initially he produced blood-streaked sputum on several occasions.

Examination at this time revealed a normal temperature; dullness to percussion, absent breath sounds and increased vocal fremitus in the lower right chest; and decreased excursion of the right chest. One observer reported a palpable spleen. Chest roentgenogram revealed homogenous opacification of the right lower lung field. Occasional fibrocalcific deposits were noted in the left upper and mid lung field with some hilar calcification. Hemogram showed 9.2 Gms. % of hemoglobin, an hematocrit of 30%, and a white blood cell count of 2,300 with 26% neutrophils, 66% lymphocytes and 8% eosinophils. L. E. cell preparations were negative. Thoracentesis was performed on three occasions. The fluid appeared blood-tinged and serous; no malignant cells were seen and no organisms were found on culture for pyogens and acid-fast bacilli. Repeated sputum cultures, gastric washings and bronchial washings were negative for acid-fast bacilli and fungi as were bone marrow cultures. Bone marrow biopsy showed some areas of increased cellularity. Bronchoscopy was not remarkable. Second strength tuberculin skin test showed a 1 cm. area of induration as did the histoplasmin. The neutropenia persisted during hospitalization but some improvement was noted. The patient was treated with streptomycin and INH for five weeks. By the time of discharge, two months after admission, he was feeling better. His cough had diminished and he had gained weight. Roentgenogram of the chest revealed considerable improvement.

He was next admitted on November 19, 1956, one year later, because of continuing weakness. At this time the additional history was obtained that the patient had been using benzine for five years to clean engine parts in a closed area. Examination revealed

hepatomegaly and splenomegaly, each organ extending about 5 cm. below the respective costal margin.

The hemoglobin was 11 Gm. % and the hematocrit 37%. White blood count varied from 3,100 to 4,400 with about 40% neutrophils and 60% lymphocytes. Reticulocyte counts ranged from 0.4-1.5%. Total protein and liver function studies were not abnormal. Bone marrow aspiration revealed decreased cellularity. Cr^{51} RBC life span study showed a T ½ of 24 days (normal = >25 days). Chest roentgenogram revealed blunting of the right costophrenic sulcus and pleural reaction. After some two months in the hospital, without specific therapy, the patient felt better and was discharged.

His third and final admission occurred on February 25, 1957, about 15 months after his first admission. Two weeks previously he developed profound weakness and one week before admission had developed repeated shaking chills, fever and profuse diaphoresis. Examination revealed an acutely ill man with a temperature of 103 degrees and a lemon-yellow pallor. Dullness was noted in the right lung field and a grade 1 systolic murmur was heard at the heart apex. Hepato-splenomegaly was again found. A gross tremor of the extremities was observed.

Hemogram showed a hemoglobin of 5.8 Gms. %, hematocrit of 20%, platelet count of 10,000 and white blood cell count of 500 with 8% neutrophils and 92% lymphocytes. 2+ albumin and numerous bacteria were found in the urine. Blood calcium was 3.8 mEq./L. and phosphorous 4.2 mg. %. The NPN rose from 34 to 84 mg. %. Coombs test was negative. Bone marrow culture revealed no growth. Blood culture revealed *Diplococcus pneumoniae* and the throat culture, *Klebsiella pnuemoniae*. Spinal fluid was not remarkable. Roentgenogram of the chest revealed a minimal fibrotic reaction in the left upper lung. Six days later, eight days before death, a chest roentgenogram showed a diffuse, mottled appearance throughout both lungs.

The patient was treated with very large doses of penicillin and streptomycin and was given a number of blood transfusions. He continued to have a septic course. One day prior to death, white mucoid patches were noted on the mouth and tongue and Mycostatin therapy was started. He died on March 12, 1957.

Doctor Smith: Doctor Glasser would you show us the roentgenograms and discuss them with us.

Doctor Glasser: The first chest film we have was taken four days prior to the patient's first admission to the hospital. We note evidence of moderate pleural fluid formation in the right chest which obscures the normal parenchymal markings in the lower half of the right lung. The left lung appears clear. The next two films were taken three days following admission of the patient to the hospital. Both the PA and right lateral projections show evidence of an infiltrate—small, patchy and tight, but very poorly defined and localized to the posterolateral segment of the right middle lobe. We note in the lateral projection some loculation of the pleural fluid posteriorly. The serial films made subsequently show very little change in the infiltrate. The pleural reaction appears to be slowly subsiding. There is still some evidence of fluid which seeks the dependent portion of the right chest. In the last film previous to his first discharge we still see residual evidence of both the parenchymal and pleural involvement.

During his second admission, PA and lateral views of the chest were taken. On close examination of these films, we see evidence of the parenchymal infiltration within the middle lobe with a downward displacement of the minor fissure. There is pleural scarring. The left lung still appears quite clear of any involvement. Abdominal films show a prominent splenic shadow. The liver appears to be enlarged also but we do not see it sufficiently clear to note its inferior border in the survey film of the abdomen.

During the patient's third and final admission, there were four films of the chest. The first one shows little change in the appearance of the lungs contrasted with the previous films. The lung markings do appear somewhat heavier and more prominent, but we must remember that this patient was

quite ill and could not cooperate and inspire fully. The film dated March 1, 1957, was made 7 days prior to death, and for the first time we note a disseminated mottling of both lungs. The final film, dated March 4, 1957, shows perhaps more strikingly this mottled appearance of the lungs.

In summary, we have radiographic evidence of what appears to be, with full consideration of the clinical findings and course of the patient, a chronic inflammatory process involving the parenchyma of the lung and pleura which appears to have been smoldering over a period of a year and a half. The process cleared somewhat and then recurred and apparently disseminated widely prior to his death. We cannot, of course, more clearly identify this process from our radiographic observations. There are many conditions which must be considered in the differential diagnosis which I am sure our distinguished guest will cover.

Doctor Smith: Thank you very much Doctor Glasser. Are there any questions of Doctor Glasser? If not, I should like to introduce our visiting professor, sponsored by the V. A. Hospital, Doctor Isadore Snapper. Doctor Snapper is Director of Medicine and Medical Education at the Beth El Hospital, Brooklyn, New York. Doctor Snapper, we should appreciate your comments on the case.

Doctor Snapper: I don't need to tell you that an expert "CPC man" looks upon these protocols not only as purely mathematical things, but also with the surrounding circumstances in mind. I know from bitter experience that if I go somewhere where I've never been before and my hosts go back to 1955 to find a case which is considered worthy of my miserable talents, I am going to meet a very rare case, probably a case which has been published. I want to tell you what the real technique of "CPC man" is—which I do not follow. One inquires about the name of the pathologist and of the man who has made the protocol and then one tells one's helpers to go and look in the index for these names and try to find the case which fits this protocol. One looks up the case and stands there and shines. I am too old for all this, so I did not do it. I am therefore going to discuss this case as I see it.

The very first thing, I ask our honorable secretary for some information. This man has been working with benzine. Would you mind explaining what you mean by benzine? This is a word which in different countries has different meanings.

Doctor Smith: I am sorry you asked this, but I knew you would. The word in the chart is spelled benzine, so this is the way I left it in the protocol. However, none of the original house officers who took the history from this man are available to check with. This could well be spelled either way; furthermore, I understand that the more common cleaning fluid the automobile mechanics are using in this vicinity is benzol or benzene.

Doctor Snapper: We have a man of 62 years who came in with infiltration in the right middle lobe, fever, cough and blood-streaked sputum. It is quite evident that in every patient who has pneumonia which doesn't disappear one has to think of tuberculosis. On the other hand, tuberculosis of the middle lobe is known to be extremely rare. Although it's very tempting to say that since the man had an infiltration which disappeared during the time he received INH and other anti-tuberculosis drugs, this may have been tuberculosis, it is difficult for me to diagnose tuberculosis of the right middle lobe which disappears without leaving any traces. It is not my intention to diagnose this as tuberculosis.

Now this man had an aplastic kind of anemia which lasted remarkably long. On the first admission the white count was 2,300 with 26% neutrophils and 60% lymphocytes. As far as I am concerned aplastic anemia lasting this long is rarely a pure aplastic anemia. Therefore, I would like to diagnose in this case a remarkable disease of the bone marrow which at first view gives the impression of aplastic anemia but is really something else. I am somewhat impressed by the bone marrow study which showed the presence of both fibrous bone marrow and hyperplastic bone marrow. I have had bitter experiences with bone mar-

rows. Every time somebody shows me a bone marrow with the intention that I will diagnose it multiple myeloma, I know it isn't myeloma or it wouldn't have been shown to me. I ask if the bone marrow looks like multiple myeloma. How many plasma cells did this patient have? In aplastic anemia one very often sees an invasion of plasma cells in bone marrow, which may look like multiple myeloma. If fibrosis of the bone marrow doesn't sound like aplastic anemia, the absence of plasma cells also doesn't sound like aplastic anemia. I am not going to diagnose aplastic anemia.

We must then solve two problems, I think: (1) What was the original disease in this case? (2) What was his infiltration which goes like a red thread through the story, as Doctor Glasser says, and the remnants of which gave rise to a micronodular dissemination of the lungs. With your kind permission, I am going to have a look at the micronodular lesions on the chest films. We first have to discuss what is the disease from which he is suffering. I am bound as a Hollander to make one diagnosis only. Benzene or benzol, which may cause leukopenia and which was used as a drug for leukemia for a considerable time, was shown by a famous Dutch physician, Lignac (whose name you might not recognize, but who really found Fanconi's syndrome) to actually produce lymphomas. We must therefore consider that this patient may have leukemia. In this country I have seen a few watchmakers with leukemia who had cleaned the works of their watches in benzene and it was pathologically proven that they had the benzene necrosis in the spleen that one finds in benezene or benzol poisoning. In every patient with aplastic anemia one always has to think of the possibility of underlying lymphoma. With aplastic leukemia and no cause for it, one should never give up the idea the patient has lymphoma and may even have lymphatic leukemia. I am inclined to think in this direction in the present patient. We know that in lymphomas, especially Hodgkin's Disease, fibrosis of the bone marrow occurs. I should like to diagnose this long extended hypoplastic anemia as a lymphoma. If it turns out that this was leukemia, I would not feel insulted, because lymphoma and leukemia are practically the same thing. I am inclined to think of Hodgkin's Disease. If it is this, I shall explain to you why I think more of Hodgkin's Disease in this case than the other lymphomas. The man is suffering from lymphoma, leukemia or one of the other reticular cell diseases which are connected.

This group of diseases often gives rise to very open secondary infections. A large number of patients with Hodgkin's Disease die of tuberculosis. Also patients with diabetes and sarcoid have a tendency to develop a secondary infection of tuberculosis. Of course, in areas where fungus diseases are frequent, one must think more of a secondary infection with a fungus disease. As you know better than I because you are in the Middle-West, some pathologists have held for some time that Hodgkin's Disease is a manifestation of fungus disease, especially histoplasmosis. This, of course, is the same as saying that Hodgkin's Disease is a manifestation of tuberculosis because it often ends as tuberculosis or that sarcoid is a manifestation of tuberculosis because it may end with a secondary infection of tuberculosis. But the tendency for fungus disease to complicate Hodgkin's Disease is so great that even on the East Coast where fungus diseases are rare, I occasionally see a patient with Hodgkin's and torulosis, which is a rare fungus disease, but still the most frequent of all on the East Coast. Therefore, two things very much attract me in the direction that this man had a secondary infection with a fungus disease. If I look at the micronodular dissemination in the lungs which developed a few days before death then I would say it is certainly not tuberculous dissemination because the infiltrations are too large for tuberculosis. What about histoplasmosis? I would think that since this man had a positive skin reaction for histoplasmin and lives in this area, histoplasmosis is the most probable cause of his disease. You may ask about all of the negative fungus cultures. In all fairness, I must say that I have seen a patient with histoplasmosis proven at autopsy who had numerous cultures — bone marrow, peripheral blood, and lymph nodes—and none were positive. It is, of course, a pity that we have

no globulin determinations in this whole disease because if the gammaglobulin had been low, we would be much nearer to the reticulum cell system. Since the globulins are made by lymphocytes and by plasma cells any disease of the reticulum system very often may have hypogammaglobulinemia. This would explain the tendency to histoplasmosis.

Doctor Smith: We have a serum electrophoresis on his second admission. Gammaglobulin represented 34% of the total protein.

Doctor Snapper: Well, it doesn't amaze me. Hodgkin's Disease often has an increased gamma-globulin. I would think this man had a reticulo-endothelial disease and a secondary infection, which I do not think is tuberculosis, but which, since the man had a positive histoplasmin reaction, may have been histoplasmosis. Since I am a fool, I am now going to define his reticulosis. I think it is a lymphoma, probably Hodgkin's Disease. I will reserve the reason I say Hodgkins until after I hear whether it is Hodgkins. If it is not Hodgkin's I will keep silent.

Doctor Smith: Thank you very much, sir. Any questions?

Doctor Williams: Was a complement fixation test for histoplasmosis done?

Doctor Smith: I don't believe I saw one on the chart. Any other questions?

Doctor Wolf: Could I ask Doctor Snapper whether he visualizes the initial episode as histoplasmosis as well as the terminal one?

Doctor Snapper: Yes. Because, as I say, I could not place tuberculosis in this middle lobe. It ends with nodular disease disseminating. I would think it is the same disease.

A Physician: Is it possible that this is all one disease? Might histoplasmosis be responsible for his blood picture also, rather than lymphoma?

Doctor Snapper: The answer is no. If I am right, I will explain to you why.

Doctor Smith: I think I should say at this point that a correct diagnosis was never made clinically on this patient. Doctor Joel, we will now call on you for the findings in the case.

Doctor Joel: Having heard Doctor Snapner discuss the case, I ask myself whether he is the prosector and I am the clinician. I am amazed at his diagnostic acumen.

At autopsy this man was in pretty good nutritional state. He weighed approximately 185 to 195 pounds, was 72 inches long, and the exterior appearance wasn't very helpful. On opening the abdomen the peritoneum was smooth and glistening, the lymph nodes were slightly enlarged, and the liver was very large. The spleen was also large. On opening the chest there was no free fluid. The right pleural cavity was nearly obliterated by adhesions; no free fluid was seen. The left pleural cavity showed only a few adhesions. The pericardial cavity contained a few milliliters of a yellowish fluid. The pericardium was smooth and glistening. The right lung was a little heavier, congested and rubbery-like. In some areas when we cut through, it looked like a pneumonia, as you see it sometimes in cases of leukemia where you do not have the real polymorphonuclear response. The whole lung gave the impression grossly of an interstitial pneumonia. No cavities were found and no granulomas were seen grossly. This was the case in both lungs. We looked very carefully in the middle lobe and found no tuberculosis. This clears that problem up for you, Doctor Snapper.

Doctor Snapper: Small mercy — thank you sir.

Doctor Joel: Upon opening the esophagus we found a kind of membrane, slightly elevated, and made the diagnosis of moniliosis—not too astonishing in view of the massive antibiotics. The spleen weighed approximately 800 grams and the liver 2,750 grams—both really increased in size. Lymph nodes were also enlarged. The kidneys were not remarkable, showing very slight granulation, but some hemorrhages were noted. The adrenals were not too large, but showed a suggestive yellowish discoloration. The other organs in the abdomen showed no changes.

Now we come to the microscopic examina-

tion. In the liver we see changes which in some areas look like granulomata and in other areas more like necrosis. By looking more closely at the reticulum cells, we see that they are large and filled with something which look like little punctated dots. These dots are histoplasma organisms and we can make the diagnosis of histoplasmosis. They are also seen in the spleen. Nearly the same picture is seen in the lung sections. An interstitial pneumonia is present with fibrosis. The macrophages are enlarged and filled with histoplasma. Finally, on examination of the adrenals we saw, of course, histoplasma, but we also saw mycelia. Could this be from the histoplasma? We must bear in mind that we also have moniliasis. This concludes our main findings which, in each respect, show what Doctor Snapper suspected except that no lymphoma was found. This was the reason why I wondered whether he were the prosector instead of me.

In closing I should like to say that it has been a real privilege to discuss a CPC with a man of the stature of Doctor Snapper—a man who discusses so wisely and makes such a brilliant diagnosis that I was personally startled. This was the diagnosis of a great clinician. Thank you, Doctor Snapper.

Doctor Smith: We would appreciate any further remarks that you may have, Doctor Snapper.

Doctor Snapper: I honestly have very little to add to what Doctor Joel has presented. In view of the considerable amount of leukopenia, I am astonished that nothing else has been found except histoplasmosis, especially since the bone marrow biopsy indicated the presence of fibrosis, which evidently was not present at the autopsy. I therefore felt there was reason to think that the invasion of the histoplasma was favored by the presence of a reticulosis of the lymphosarcoma or Hodgkin's type, but evidently I was mistaken. Personally I have never seen a case of histoplasmosis which gave such an hematological picture for such a long time, and have never found fibrous bone marrow in histoplasmosis but have seen it very frequently in long standing Hodgkin's Disease.

Doctor Smith: Thank you very much Doctor Snapper. I know that many of you have questions, but because of the lateness of the hour, we must close. Thank you.

MEDICS IN DEFENSE

AN IMPORTANT ASSIGNMENT

Civil Defense is as essential for survival of the nation as is military defense. There is a need for clear definition of Civil Defense and an appreciation of its mission and perhaps even a new name so that it may be assigned a role in the protection of the nation equal with the Armed Forces.

The threat of nuclear warfare, with its capability of mass destruction of huge elements of our nation, has imposed on the medical and allied health professions of this country, a tremendous responsibility in the nation's effort to survive. Never before, in history, has a productive individual assumed such importance as he is expected to assume in modern warfare. The saving of lives, particularly of those who could contribute to the survival effort has become extremely important. The medical and allied professions must assume a far larger role in our war potential than ever before. We (the medics) face the greatest challenge with regard to Civil Defense.

MEDICAL CENTER

Message from the Dean

The University of Oklahoma Medical Center offers the only opportunities for advanced training in dentistry in Oklahoma, forestalling some of the loss of dental manpower that is a byproduct of the state's having no dental school. Initiated in 1923 with the establishment of an internship in dental surgery, the postgraduate program in dentistry has continued to expand as the Medical Center has grown.

Since 1953, the Division of Dental Surgery has trained two interns each year. In 1957, the oral surgery residency program was approved by the American Dental Association. In 1959, a restorative dentistry internship was started at Children's Memorial Hospital.

The American Board of Oral Surgery now requires for certification three years of approved training after completion of dental school. An important milestone was reached in June, 1960, when the first trainee completed the full three years of training at the Medical Center. He also was awarded a Master of Science degree.

Oral surgery is that part of dental practice which deals with the diagnosis and the surgical and adjunctive treatment of diseases, injuries and defects of the jaws and associated structures. An oral surgery trainee spends at least six months full time in the Department of Anesthesiology. He also covers the Mercy Hospital emergency room for additional experience with acute traumatic cases.

Oral surgery might be considered a connecting link between the physician and the dentist. As a result of the increased educational requirements, dentists are now qualified to practice oral surgery in a much wider scope than was formerly considered within the domain of dentistry. This has brought about a somewhat complex inter-relationship between medicine and dentistry, and it is only natural that the question should arise as to the status of oral surgery in relation to the practice of medicine.

The oral surgeon is a dentist and not a physician. It is not his desire to practice medicine but rather to practice intelligently a specialty of dentistry which often requires a fundamental knowledge of medical problems. In a general respect the goal of the dentist is similar to that of the physician. Both are striving to prevent disease, alleviate human suffering and prolong life.

I would like to close this message with a personal observation concerning the faculty members of the Division of Dental Surgery. Over a span of years they have kept alive a spark of dental education in this state, have given extensive professional service to patients at the teaching hospitals of the School of Medicine, and have earned our respect and admiration.

Mark R Everett

The function of the adrenal cortex supports pathogenic processes just as it does normal functions but is only rarely the primary etiologic agent.

The Role of Adrenal Cortex in the Etiology of Disease*

DWIGHT J. INGLE, Ph.D.

Dwight J. Ingle, Ph.D., received his doctorate from the University of Minnesota in 1941. He is now Professor and Chairman of the Department of Physiology at the University of Chicago.

Doctor Ingle is a member of the American Physiological Society, the American Diabetes Association, the Alpha Omega Alpha, Sigma Xi and Phi Beta Kappa. In addition, he is a Past-President of The Endocrine Society.

I AM NEITHER a physician nor a pathologist. My claim of a right to discuss the role of the adrenal glands in causing disease is that the subject interests me and I have had some success in making experimental animals sick. Our data and ideas may or may not have some bearing on diseases of man.

I shall not discuss Addison's disease, Cushing's syndrome, adrenal virilism, primary aldosteronism, and certain mixed syndromes in which, as in the others, the etiology is known to involve the adrenal cortices. I am concerned with the concept that the adrenal cortical response to non-specific stress—either an increase or an imbalance in its secretion of hormones—is a primary cause of disease.

This concept has great appeal to many physicians. The supporting evidence is impressive, but to accept it uncritically reflects the common failure of medical education to teach methods of testing claims to knowledge.

The evidence which supports an interest in this problem is as follows: *(a)* ACTH, cortisone, hydrocortisone, and a host of synthetic derivatives of hydrocortisone can suppress the symptoms of a large number of human diseases, most of which are classified as inflammatory diseases. The growth of some cancers can be retarded by these hormones. There is no satisfactory evidence that the hormones cure these diseases or that these diseases represent any form of adrenocortical insufficiency. *(b)* Removal of the adrenal glands may be followed by amelioration of diabetes, hypertension, and certain cancers in experimental animals and in patients. *(c)* Overdosing experimental animals with one or another corticoid can cause a great deal of interesting pathology, including steroid diabetes, hypertension, arteriosclerosis, gastrointestinal ulcers, nephritis, nephrosclerosis, periarteritis nodosa, etc. Resistance to infections is dramatically suppressed in animals and patients with severe hypercorticalism. *(d)* As discovered by Skelton,[1] enucleation of adrenal glands in the sensitized rat (unilateral nephrectomy, high sodium load) is followed by hypertension and renal and cardiovascular lesions. *(e)* Wexler and Miller[2] claim that small doses of ACTH cause an increase in the incidence and severity of renal-cardiovascular lesions which occur in aging breeder rats. In addition, there are a host of observations which implicate the adrenal cortices in various diseases, such as changes in the morphology and secretory activity of these glands in one disease or another or, more commonly, changes in the metabolites of adrenal steroids found in blood and urine.

What are the weaknesses of this concept for which Dr. Hans Selye[3] is the principal protagonist? First, much of the supporting evidence is derived from conditions which do not occur naturally. Also, there is lack of experimental evidence that naturally occurring, non-specific stress can cause diseases under naturally occurring conditions.

*Presented at the Third Oklahoma Colloquy on Advances in Medicine, March 24-26, 1960.

Pathogenic Effects of Steroids

Deoxycorticosterone and other sodium-retaining steroids are damaging, especially if given to an animal (usually the rat) receiving an abnormally high load of sodium chloride whose renal system is crippled by uninephrectomy. These animals may develop severe hypertension and sclerosis of vessels in the heart and kidney. Large doses of these steroids given for several weeks can cause some hypertension and some pathology to normal rats on a commercial diet which contains approximately 1 per cent salt. If the salt intake is reduced to the smallest amount needed by the animal, hypertension and renal-cardiovascular pathology do not occur. Some of the artificial steroids, such as 2 α-methyl, 9 α-chlorocortisol, have greater pathogenic potency than any of the naturally occurring hormones. Aldosterone can cause lesions in the salt-loaded animal, but it is a less effective damaging agent than was once expected.

Cortisone, hydrocortisone, and whole adrenal cortical extract are each pathogenic when given in large doses to uninephrectomized salt-loaded rat. Cortisone and hydrocortisone are comparatively weak sodium retainers. They cause only a moderate rise in blood pressure, and the renal lesions are more likely to resemble chronic nephritis than nephrosclerosis. Necrosis may occur in cardiac muscle; it is believed to be related to potassium loss. Unless animals overdosed with cortisone or hydrocortisone are treated with antibiotics, many foci of infection can be found in heart and kidney and elsewhere.

Damaging Effects of Other Hormones

ACTH—Wexler and Miller[2] have claimed that small doses of ACTH cause an increase in the incidence and severity of renal-cardiovascular lesions which occur "spontaneously" in discarded breeder female rats from the Sprague-Dawley farms. Wilgram and Ingle[4] have given small, moderate, and large doses of ACTH to similar rats with negative results. The administration of very large (16 units or more of long-acting ACTH per rat per day) doses to uninephrectomized, salt-loaded male rats does result in damage to the kidney and heart which is rather different in nature from that caused by overdosage with steroids. These animals become host to disseminated infections which are partially but not completely suppressed by treatment with antibiotics. The lesions represent inflammatory changes and foci of infection. The moderate rise in blood pressure in some of the animals overdosed with ACTH may be secondary to renal damage caused by infection.

Growth Hormone—Selye[5] has shown that the administration of hypophyseal growth hormone to uninephrectomized rats given saline to drink is followed by an increase in the incidence and severity of renal-myocardial lesions. His data show that there is an accompanying rise (more than 100 per cent) in the volume of saline which these animals drink. Is this the primary cause of the damage? We have limited experience with growth hormone given to uninephrectomized rats eating diet containing 4 per cent sodium chloride and drinking tap water.[6] The rats to which we have given growth hormone showed a 20 per cent increase in the amount of high salt diet eaten *ad libitum*, the average blood pressure was slightly higher than normal, and the increase in pathology was but little greater than in the controls. The growth hormone did accelerate the gain in weight and cause a polydipsia. Further study of the pathogenic effects of growth hormone will be required to make known the mechanisms whereby it can cause disease.

Thyroid and Parathyroid Hormones

Lehr[7] has reviewed his own evidence and that of others showing that the hormones of thyroid and parathyroid can aggravate the development of renogenic and reniprival cardiovascular diseases in the rat. Although these observations will not be discussed here, it is important to note that under certain laboratory conditions these hormones affect the development of experimentally induced diseases.

Adrenal Enucleation

In the rat the adrenal can easily be enucleated by clipping off the distal tip of the gland and popping the remaining cortex from its capsule by gentle pressure on the sides of the gland. A layer of glomerulosa cells remains attached to the capsule, and cortical tissue regenerates from this remnant. When adrenal enucleation is done in the unine-

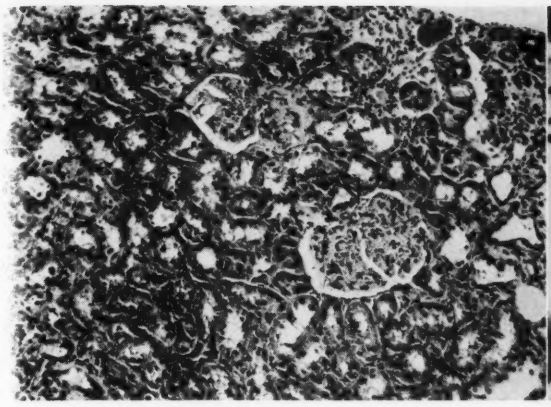

Figure 1. Low power view showing mild renal damage. There are three abnormal glomeruli. A very small area of fibrosis is present just below capsule.

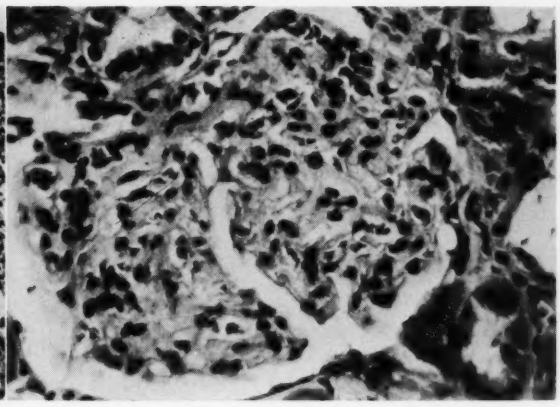

Figure 2. High power of glomerulus from figure 1. There is glomerular hypertrophy, with capsular adhesions and early thickening of intercapillary connective tissue.

phrectomized rat given a high salt load (either 1 per cent saline to drink or 4 per cent salt diet), the animal develops hypertension and renal-cardiovascular disease after three or four weeks of adrenal regeneration.[1] For unknown reasons the rats drink increased amounts of saline during regeneration of the adrenal cortices. Although an abnormally high salt load and unilateral nephrectomy are both necessary conditions, we have here a kind of hypertensive vascular disease which seems referable to something happening within the adrenal cortex itself. The following hypothesis seemed plausible. Since the remaining glomerulosa cells secrete aldosterone, a powerful sodium-retaining hormone, it was supposed that an excess of aldosterone and a subnormal amount of glucocorticoids are secreted during the regeneration of the enucleated adrenal gland. Direct studies[7] of the secretory products of the regenerating cortex have failed to show either an excess of aldosterone or an abnormal secretory pattern of steroids. It has been postulated that during the phase of cortical insufficiency which follows adrenal enucleation, the vascular tree becomes abnormally sensitive to steroids so that when secretion is renewed in the regenerating gland, the subnormal amount of steroids secreted now behaves like an excess. This is not the only interpretation that can be made of these puzzling results. We have supposed that the intact adrenal gland of the salt-loaded animal can suppress its secretion of sodium-retaining steroids to a minimum, although not to zero. The salt-loaded animal having enucleated adrenals may be less able to suppress the secretion of sodium-retaining steroids during the phase of adrenal cortical regeneration. A comparison of the secretory products of normal and regenerating adrenal glands should be made under conditions of both minimal and high salt intake.

Whatever be the cause of adrenal regeneration hypertension, it seems possible that it is due to the trouble that the animal has in excreting salt—because a high salt load and crippling of the excretory capacity by uninephrectomy are both necessary conditions.

Stressors

When uninephrectomized salt-loaded rats are exposed to cold for several weeks, they develop nephrosclerosis and hypertensive vascular disease.[9] Some animals develop cerebral hemorrhages. These dramatic changes are associated with a voluntary increase in intake of the high salt diet.[10] When the intake of the diet is restricted to that normally eaten at room temperature and the animal is allowed to drink sugar water to meet its increased need for energy, there is only a small increase in the damage to the renal-cardiovascular systems. When uninephrectomized rats are tube-fed amounts of the high salt diet comparable to those eaten *ad libitum* by cold-exposed rats, the extent of damage at room temperature is almost as

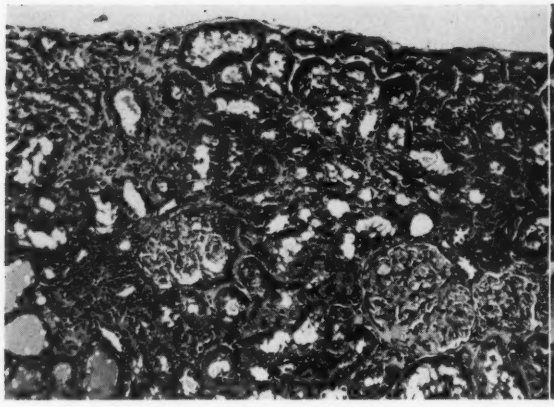

Figure 3. Low power view showing moderate renal damage. There are three abnormal glomeruli and a few dilated tubules. A small wedge-shaped area of fibrosis is present just below capsule.

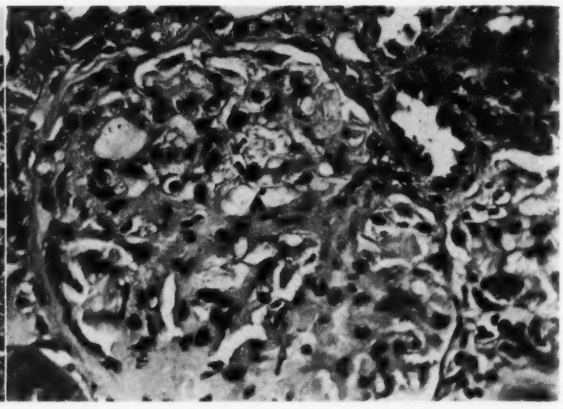

Figure 4. High power of figure 3. The damaged glomerulus shows thickening and adhesions of Bowman's Capsule, obliteration of subcapsular space and early glomerular fibrosis.

great as that occurring in the cold-exposed rats.

No other stressor has been found to cause nephrosclerosis and hypertensive vascular damage in the rat. There is a small rise in blood pressure and some increase in inflammatory changes in kidneys and hearts of uninephrectomized, salt-loaded rats subjected to laparotomy once each week, or a burn once each week, or limb ligation shock once each week for eight weeks.[11] The stress of repeated hemorrhages, fractures, neuromuscular excitation, injections of diluted formalin, and the repeated excision of skin were each ineffective.

No form of stress has been found to reproduce the "diseases" caused by corticoid overdosage in either the intact or uninephrectomized rat on a normal diet.

Salt Loading

During most of this century some clinical investigators have considered that a higher than needed dietary intake of sodium chloride plays an etiologic role in the cardiovascular diseases of man. We have confirmed the observation of Menealy[12] and Fregly[13] that high dietary loads of sodium chloride can cause severe hypertension and renal-cardiovascular damage in uninephrectomized rats and somewhat milder changes in intact rats. The genesis of pathology in the salt-loaded rat is greatly affected by adrenalectomy, as we have shown.[14] The amelioration of damage is not complete, the adrenally insufficient rat may still show some positive correlation between salt-load and blood pressure and, as will be described below, full-blown hypertensive vascular disease can be caused by salt-loading in the absence of adrenal cortical hormones; but the disease appears and progresses more slowly than in the presence of adrenal cortical hormones. By what means does adrenal cortical insufficiency protect against the pathogenic effects of salt-loading? It seems improbable that salt-loading causes an increase in the secretion of adrenal steroids. All available evidence indicates that a high salt load causes a significant suppression of the secretion of aldosterone, the most potent known sodium-retaining compound among the natural steroids. But salt-loading does not suppress the secretion of sodium-retaining steroids to zero, and the basal secretion by the adrenal cortices may have some obligatory sodium-retaining action. We have shown[14] that the untreated adrenalectomized rat drinks less water than does the non-adrenalectomized rat at a given dietary load of sodium chloride. We suppose that the adrenally insufficient animal can rid itself of sodium chloride more easily than can an animal in a state of eucorticalism and that, for this reason, the pathogenic effects of a salt load are less, but we do not know that this is true.

The salt-loaded, uninephrectomized, adrenalectomized rat is very sensitive to the administration of ACE (adrenal cortical extract).[15] Doses of ACE which are too small

to normalize all the metabolic aberrations of adrenal cortical insufficiency cause hypertension in rats fed a diet of 4 per cent salt. Here, again, we suppose that the intact adrenal glands can suppress the secretion of sodium-retaining steroids to a significant extent, but the rat given a uniform, although small amount of ACE has fixed excess of exogenous sodium-retaining hormone coexisting with a deficiency of glucocorticoids.

Production of Renal Cardiovascular Disease in Adrenalectomized Rats

Exposure to Cold—Crane, Baker, and Ingle[16] have demonstrated renal-cardiovascular pathology in adrenalectomized rats exposed to cold. All the rats were uninephrectomized and ate a 4 per cent salt diet *ad libitum*. Adrenalectomized rats were treated with maintenance doses of ACE. Groups of adrenalectomized and non-adrenalectomized rats were each subdivided into groups which were adapted to low temperature and kept at 3-5°C for 60 days; similar groups were kept at room temperature for the same period of time. When the rats were exposed to cold, the gross and microscopic damage to hearts and kidneys was equally marked in adrenalectomized and in non-adrenalectomized rats. The role of the adrenal glands in causing the pathology which occurred in the cold-exposed rats is uncertain for two reasons. Food intake was not constant. The animals exposed to cold ate more of the high salt diet than did controls at room temperature. Second, the amount of ACE (4 cc. per rat per day) used for replacement therapy was associated with some increase in renal-cardiovascular pathology when the comparison was made with non-adrenalectomized rats at room temperature.

Methylandrostenediol—Large doses of methylandrostenediol (MAD) cause severe hypertension with cardiovascular-renal damage in the salt-loaded uninephrectomized rat. Such animals develop edema when fed a 4 per cent sodium chloride diet by stomach tube, thereby indicating sodium-retaining effects of this synthetic steroid. Adrenalectomy protects the rat against the damaging effects of MAD; but when adrenalectomized, uninephrectomized, salt-loaded rats are maintained on small doses of ACE, the administration of MAD causes hypertension and renal-myocardial damage[6] quite as severe as can be produced in the presence of the adrenal glands.

Salt-loading—It was noted above that the pathogenic effects of salt-loading are much less severe in the adrenalectomized rat. Recent and current studies by Wilgram, Young, and Ingle (unpublished data) in this laboratory show that when salt-loading is continued over longer periods of time—from six months to a year—hypertension with renal-cardiovascular pathology does develop in adrenalectomized-uninephrectomized rats in the absence of hormonal therapy. Some of the changes are illustrated in figure 1.

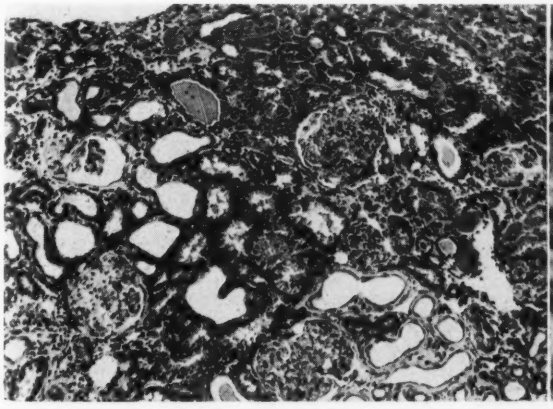

Figure 5. Low power view showing moderately severe renal damage. There is fibrosis just below capsule, with considerable tubular dilatation and cast formation, and widespread glomerular damage.

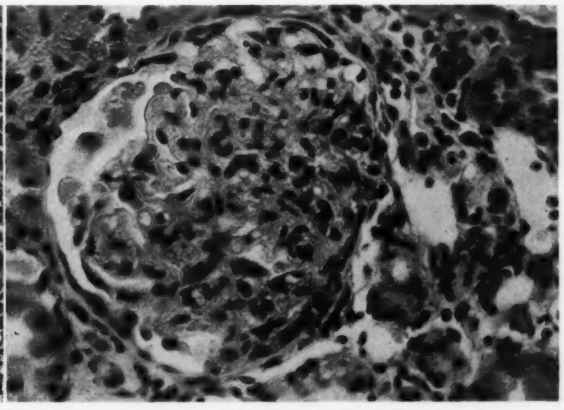

Figure 6. High power of glomerulus from figure 1. There are capsular adhesions with partial obliteration of the subcapsular space. The afferent arteriole shows a mild degree of hypertrophy.

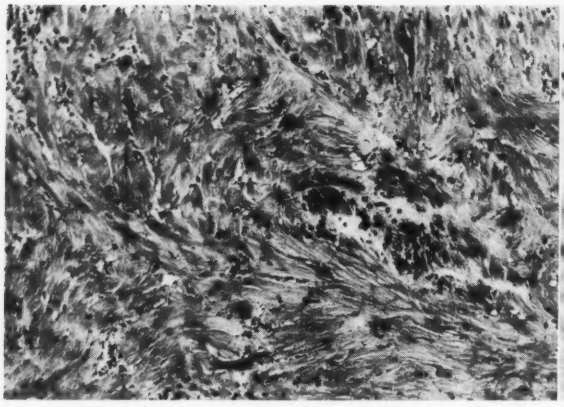

Figure 7. Low power of heart showing edema and lymphocytic and mononuclear infiltration.

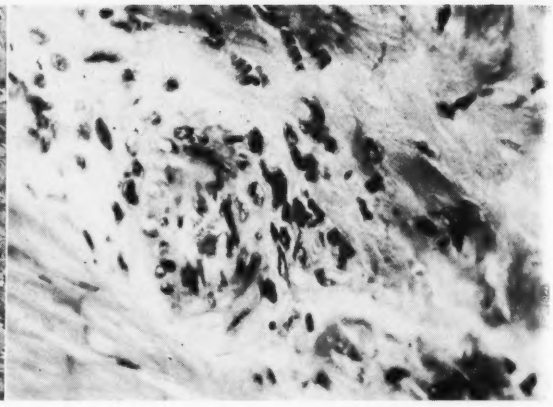

Figure 8. High power of figure 7. Mononuclear infiltration has occurred into the perivascular connective tissue of a small arteriole. Some of the cells resemble Anitchikov Myocytes.

Fregley[13] has also found salt-loading to cause hypertension in the untreated adrenalectomized rat.

Discussion

Although the hormones of the adrenal cortex can produce pathologic changes simulating human diseases when given in excess, I doubt that non-specific stressors cause either an absolute hypercorticalism or a pathogenic imbalance of hormones. There is abundant evidence that the adrenal cortical response to stress serves the cause of homeostasis. Most important is the lack of direct evidence that non-specific naturally occurring stressors can cause disease.

And then it is known that these diseases under study can be induced by experiment in the adrenalectomized animal. It is not necessary to have changes in the secretory activity of the adrenal cortices in order to produce the so-called "adaptation diseases."

We must not discount the fact that the signs of certain diseases are ameliorated by adrenal cortical insufficiency and that these diseases are more difficult to induce in the adrenally insufficient animal. The hormones of the adrenal cortex are a part of the causal pattern when they are present. I have described their role as a supporting or permissive cause rather than an active cause. In the experiments involving salt-loading, there is reason to believe that salt is the villain. Of course, there are many other means of causing diseases which do not seem to represent difficulty in handling sodium chloride. But in those experiments involving salt-loading, I am inclined to regard salt as the villain and the adrenal hormones as a conditioning factor. Professor Selye regards salt as a conditioning factor and the hormones of the adrenal cortex as primary causes of disease. I believe that the difference in point of view is real and important.

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University of Chicago, Chicago, Illinois

Steroid diabetes is ameliorated in rats subjected to the stress of Walker carcinoma, surgery, toxins, neuromuscular stress, etc. although all severe stress is thought to stimulate the adrenal cortex to greater secretory activity.

The Effect of Some Stressors on Symptoms of Cortisone Overdosage*

DWIGHT J. INGLE, Ph.D.

DAVID J. INGLE

Dwight J. Ingle, Ph.D., received his doctorate from the University of Minnesota in 1941. He is now Professor and Chairman of the Department of Physiology at the University of Chicago.

Doctor Ingle is a member of the American Physiological Society, the American Diabetes Association, the Alpha Omega Alpha, Sigma Xi and Phi Beta Kappa. In addition, he is a Past-President of The Endocrine Society.

David J. Ingle graduated from Harvard in 1955 and is now engaged in a Predoctoral Fellowship with the U.S.P.H. He is a member of Sigma Xi and a graduate student in physiology at the University of Chicago.

THE PRECISE role of adrenal cortical secretions in supporting the internal adjustments of the mammalian organism to severe stress is obscure, cloaked in generalities. What are the consequences of flooding the system with adrenal cortical hormones in response to severe stress? This question has provided ample controversy—our concept that it serves to meet an increased need for hormone, supports homeostasis, and does not represent hypercorticalism is not unopposed. But we now approach another question in the background: when an experimental animal is overdosed with adrenal steroids, does exposure to stress ameliorate the state of hypercorticalism? We have some data from studies on the rat which bear on this question but which do not permit a satisfactory answer.

Background

It seems to be generally true that the needs for adrenal cortical hormones are increased during severe stress and that this need is met by an increased secretion of hydrocortisone and/or corticosterone. We and others have puzzled about the reasons for this increased need without finding a satisfactory answer. It was once believed that these steroids are catabolized more rapidly during stress and that increased secretion is required to maintain a constant level of glucocorticoids in the fluids of the body. Actually, the titer of glucocorticoids in the body fluids rises above resting values, at least during the early stages of the response to severe stress. Although the secretion of aldosterone is affected—temporarily at least—by ACTH and some stressors, the regulation

*Presented at the Third Oklahoma Colloquy on Advances in Medicine, March 24-26, 1960.

of the secretion of aldosterone is controlled by extra-hypophyseal mechanisms which are sensitive to other kinds of metabolic signals.

What are the consequences of adrenal cortical activation during exposure to stress? Without claiming insight into the mechanisms by which these hormones act, it seems reasonable to suppose that these are normally homeostatic. But any function is subject to disorder. The nature and frequency of "derailments" of the adrenal cortical response to stress are subjects of debate.

Adrenalectomized animals and patients given a level of substitution therapy adequate to maintain eucorticalism under non-stress conditions can usually survive mild forms of stress without the level of hormone intake being changed. This was not true in the recent past when adrenalectomized animals and patients were under-treated due to the scarcity and high cost of adrenal cortical extract and steroids. In those days a minor stress was a threat to life.

Can a state of hypercorticalism be produced by exposure to stress? We say, "Probably not." The increased amounts of steroids secreted during stress only suffice to meet the increased need for these hormones, and eucorticalism is sustained. If this be true, it then becomes reasonable to postulate the corollary concept that a state of hypercorticalism caused by a fixed level of corticoid overdosage in the non-stressed animal should be ameliorated by exposure to stress. We have attempted to test this hypothesis in the laboratory.

Requirements of the stressed rat for cortical hormones. The Ingle muscle-work test is a severe stress—the most severe in our experience. The 200 gm. male rat is anesthetized with sodium phenobarbital, the gastrocnemius muscle weighted with 100 grams and stimulated to contract five times per second. Not only does muscle work stress the animal, but the output of work is an index of how well the animal resists the stress. The intact rat can continue work for several days under these conditions, but the work output begins to fall within two hours. How much adrenal cortical extract is required to normalize the work performance of the adrenalectomized rat? As shown by Ingle and Nezamis,[1] the continuous intravenous injection of large amounts of beef adrenal extract can sustain a normal work output in adrenalectomized rats. Doses of 15 to 20 cc per 24 hours per rat was required. No single pure steroid can quite match this effect, although they will sustain work output at nearly normal levels.[2] The optimal dose of cortisone is 4 mg. per rat per 24 hours. The amounts of adrenal cortical extract or of pure steroid needed during the work test are at least 400 per cent greater than optimal normalizing doses during non-stress conditions. The point is this: The amounts of hormone required to normalize performance during the work test cause signs of hypercorticalism when given to similar animals under resting conditions.

Effect of stress on glycosuria in the partially depancreatized rat. Adrenalectomy ameliorates pancreatic diabetes, and overdosage of the mildly diabetic animal with adrenal cortex extract or glucocorticoids causes exacerbation of the glycosuria and may cause ketonuria.[3] The diabetes is also exacerbated when the adrenal cortices are stimulated by ACTH. It might also be expected that the outpouring of glucocorticoids during any non-specific stress would worsen a mild glycosuria. This is not true in the rat. We have tested cold, water intoxication, exercise, surgery, burns, fractures, ligation of limbs, hemorrhage, and dozens of toxic chemicals. A stressor may cause a temporary rise in urinary glucose due to hepatic glycogenolysis, but among those tested by us only ethylenediamine caused a sustained rise in urinary glucose. We have shown that the presence of the adrenal cortices is not required for this response to ethylenediamine.[4] Some stressors cause a mild suppression of glycosuria and others have no significant effect. There are many reports that certain stressors, such as infections, fractures, surgery, and emotional disturbances, can increase the insulin requirements of diabetic patients. Species differences in metabolic behavior are real and important.

The injection of toxic doses of 1.5 per cent solution of formaldehyde causes a decrease in the glycosuria of rats with pancreatic

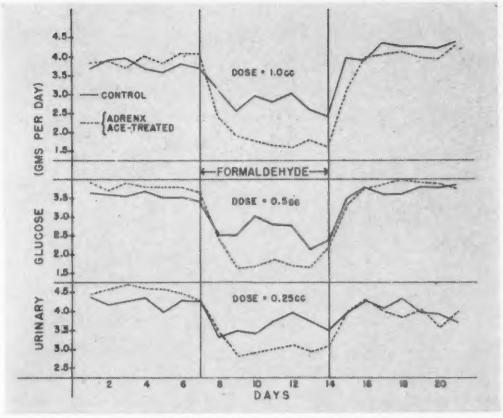

Figure 1. Effect of injections of formaldehyde on glycosuria of depancreatized rats and of depancreatized-adrenalectomized rats treated with ACE. Each average is based upon 5 rats. From Ingle and Nezamis.[5]

diabetes; the fall is greater in adrenalectomized rats.[5] These experiments were done as follows.

Partially depancreatized force-fed rats were observed until their mild glycosuria became steady. They were then adrenalectomized and each rat was treated with adrenal cortex extract in amounts required to re-establish the pre-adrenalectomy level of glycosuria. This amount ranged from 3 to 5 cc of beef adrenal extract per rat per day (1 unit per cc). The dosage required by each animal was then kept constant throughout the remainder of the experiment. These adrenalectomized rats were matched with non-adrenalectomized depancreatized rats on the basis of the level of urinary glucose. The rats were divided into three groups: the first group received 0.25 cc of 1.5 per cent solution of formaldehyde, the second 0.5 cc, and the third 1.0 cc per rat per day. Glycosuria was suppressed in all of the rats but significantly more so in the adrenalectomized rats given a constant intake of hormone (figure 1). We assume that the adrenal cortices of the non-adrenalectomized rats did respond to the stress by secreting increased amounts of steroids and that these glucocorticoids did have a positive effect upon the urinary glucose; it tended to prevent the marked decrease in glycosuria which occurred in the adrenalectomized rats. Why did the glycosuria fall in the stressed adrenalectomized rats on a constant intake of hormone? We suppose that these rats which were in a state of eucorticalism before the stress were made adrenally insufficient by the stress and behaved like adrenally insufficient rats in respect to the amelioration of glycosuria.

Recent and Current Studies

From this background of experience with the effects of stress upon experimental diabetes in the rat, it would be logical to test the effects of stress upon steroid diabetes. However, we arrived at our current program of study by an indirect route. One of us (David Ingle) independently set about to study the effects of diabetogenic dosage of cortisone acetate upon the growth of Walker Carcinoma 256, beginning treatment with steroid on the day the tumor was implanted.[6] Male Sprague-Dawley rats of about 300 gms. tube-fed a medium carbohydrate diet were used in these studies. When treatment is delayed until this highly malignant tumor is well established, the rate of its growth is retarded only a little by large doses of cortisone. When treatment with cortisone is started either before the tumor is implanted or on the day of implantation, the growth of the tumor is markedly suppressed, as shown in figures 2, 3, and 4. More interesting and dramatic is the suppression of urinary glucose by the tumor. These data are included in the figures.

Among subsequent experiments, the following important observations are established. The longer the tumor grows, the more resistant the rat becomes to the diabetogenicity of cortisone. When the tumor is allowed to grow for as long as 12 days before treatment with cortisone acetate is started, glycosuria does not appear at all, and it cannot be made to appear by giving larger amounts of cortisone acetate up to 45 mg. per rat per day. Such doses are highly toxic to normal rats but can be tolerated by tumor hosts.

Why should the tumor suppress this one symptom of hypercorticalism? We can only guess. None of our hypotheses seems to fit all the facts. The adrenal cortices of the tumor host hypertrophy several-fold. If the

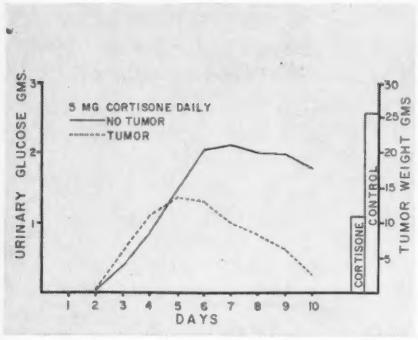

Figure 2. Effect of Walker Carcinoma 256 on glycosuria induced by cortisone in the force-fed rat. Six rats per group. Based on data published by David J. Ingle.[6]

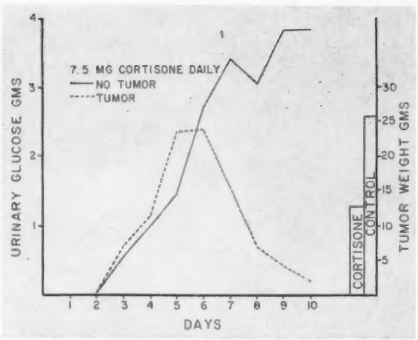

Figure 3. Effect of Walker Carcinoma 256 on glycosuria induced by cortisone in the force-fed rat. Six rats per group. Based on data published by David J. Ingle.[6]

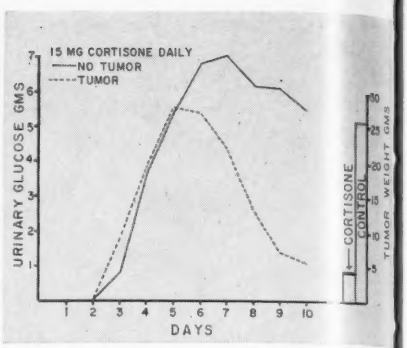

Figure 4. Effect of Walker Carcinoma 256 glycosuria induced by cortisone in the force-fed rat. Six rats without tumor; 5 rats with tumor. Based on data published by David J. Ingle.[6]

secretory activity of these glands is similarly increased, it might be expected to cause symptoms of hypercorticalism, but we have just seen that the tumor suppresses one symptom of hypercorticalism. Does the tumor burn up the extra glucose? Does the tumor take up the protein which would otherwise be used for extra gluconeogenesis in liver? Does the tumor destroy cortisone? Tumors in rats with maximum suppression of glycosuria have an average weight of less than 5 gms. (figure 4) and are almost completely necrotic. Surely the metabolic changes resulting in the disappearance of 5 gms. or more of urinary glucose daily do not occur within the tumor itself but must represent an effect of the tumor upon the metabolism of the host. Perhaps the tumor is highly toxic to the rat and increases its need for corticoids beyond the ability of its own adrenals to secrete them—and the tumor host can tolerate even large amounts of exogenous hormone because of extra "need." We know from other studies on adrenalectomized rats that they tolerate the Walker Carcinoma rather well when maintained on saline without hormonal therapy. This does not support the idea that the tumor is a severe stressor. Cortisone is not biologically inactive in the tumor host. It does suppress the hypertrophy of the adrenal cortices and even causes partial but not complete atrophy of the cortices. Spleen and lymph nodes which are markedly enlarged in the untreated tumor hosts are suppressed but not completely atrophic in the steroid-treated tumor host.

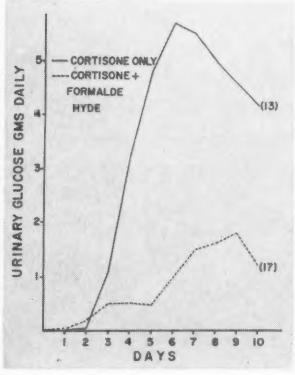

Figure 5.

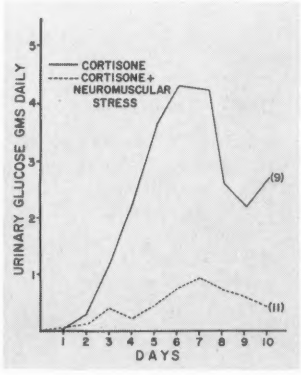

Figure 6.

Figure 5. Effect of 0.5 cc of 1.5 per cent formaldehyde on glycosuria induced by 10 mg. of cortisone acetate daily in the force-fed rat. Data published by David J. Ingle.[7]

Figure 6. Effect of neuromuscular stress on glycosuria induced by 12.5 mg. of cortisone acetate daily in the force-fed rat. Data published by David J. Ingle.[7]

The next series of studies[7] tested the possibility that other stressors would suppress glycosuria in the rat overdosed with cortisone acetate. The effect of excising skin on steroid diabetes has been published.[6] Similarly, the injection of dilute solutions of formaldehyde suppresses glycosuria, and neuromuscular stress does so almost as dramatically as does the Walker Carcinoma (figures 5 and 6).

Discussion

Glycosuria is a secondary expression of hypercorticalism. The fact that some stressors suppress steroid diabetes does not mean

that other signs of hypercorticalism can be suppressed by stress, yet the possibility that this is so seems important. We are presently engaged in studies of other signs of hypercorticalism. David Ingle is testing the effect of stressors upon the antiphlogistic effect of cortisone. Exposure to stress does not block this effect of cortisone, possibly because the stressors thus far tested have an extra-adrenal effect on inflammation like that of cortisone itself.

The senior author, having a greater subjective interest in the aging of the kidneys and the arterial tree, is studying the effects of repeated fractures upon the pathogenic effects of cortisone in the uninephrectomized, salt-loaded rat. Cortisone acetate alone but not fractures alone causes a moderate hypertension and damage to the heart and kidney. Stress does not prevent the pathogenic effects of cortisone overdosage, but the possibility that stress lessens the rise in blood pressure has not been excluded. These studies should be extended to adrenalectomized animals and to animals given deoxycorticosterone, a steroid having pathogenic potency much greater than that of cortisone. Hall[8] has reported that the stress of severe, repeated faradic stimulation aggravates the pathogenic effects of deoxycorticosterone in the rat. Other stressors and other symptoms of hypercorticalism must be tested before we can answer the question implied in the title of this paper.

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ABSTRACTS

Production of $C^{14}O_2$ from 1- and 2-C^{14}-Acetate by Human Subjects in Various Metabolic States

WALTON W. SHREEVE,* ALLEN R. HENNES** and ROBERT SCHWARTZ***

Metabolism, 8: 741-756, 1959

The rate of appearance of $C^{14}O_2$ in the breath of human subjects under diverse metabolic conditions has been determined after the single intravenous injection of 1- or 2-C^{14} acetate (40 to 200 microcuries in .75 mM). Three patients with pulmonary carcinoma and four patients with diabetes were employed in 13 individual studies.

Patients in general excreted about 60 to 70 per cent of the C^{14} from 1-C^{14}-acetate as $C^{14}O_2$ within the first 24 hours, and about 55 per cent from 2-C^{14}-acetate. $C^{14}O_2$ from 1-C^{14} acetate was excreted with an earlier and twofold higher peak activity, a steeper decline of activity from 2 to 8 hours after injection and at somewhat more rapid cumulative rate than from 2-C^{14}-acetate.

Stable, elderly diabetics (without insulin but normoglycemic) showed no difference from nondiabetic (carcinomatous) subjects in excretion of $C^{14}O_2$ from 1-C^{14}-acetate. In the stable diabetics, fasting for 40 hours, which produced mild ketosis, did not noticeably change 1-C^{14}-acetate oxidation. In stable, juvenile and lipoatrophic diabetics, $C^{14}O_2$ excretion after 2-C^{14}-acetate was apparently identical.

In paired experiments in the same individual with and without prior acute dosage with prednisone, there was in each case (three studies with 1-C^{14}-acetate, one with 2-C^{14}-acetate) a significant decrease averaging 10 to 20 per cent in $C^{14}O_2$ excretion.

In one patient analyses of peripheral venous and arterial $C^{14}O_2$ at the same time as breath $C^{14}O_2$ during the first 40 minutes after injection of 2-C^{14}-acetate showed that, while arterial and respiratory $C^{14}O_2$ were essentially parallel, the specific activity of peripheral venous $C^{14}O_2$ rose much more slowly.

*Medical Department, Brookhaven National Laboratory, Upton, N. Y.
**Assistant Professor of Medicine.
***Research Collaborator from Childrens Hospital, Harvard University Medical School, Boston, Mass.

The Role of Bile in Gastric Inhibition By Fat in the Small Bowel

RENE MENGUY*

Surgical Forum, X: 164-167, 1960

Gastric secretion and motility of the intact rat are inhibited when fat is present in the proximal small bowel. This inhibitory action is absent when bile has been previously diverted from the small intestine. Under the latter conditions, the addition of bile salts to the administered fat results in the same inhibition as in the intact animal. Since parenterally administered bile salts have been shown to inhibit gastric secretion and motility in the rat, these data suggest that, in this animal at least, gastric inhibition by fat may be due in part to an increased reabsorption of bile salts incident to their emulsion with neutral fat.

*Assistant Professor of Surgery.

Humoral Effects of Experimental Crush Syndrome

DAVID D. SNYDER* and GILBERT S. CAMPBELL**

Surgery, 47: 217-223, 1960

The humoral aspects of experimental crush syndrome were studied by cross-circulating intact, aciduric dogs with ischemic hindlimbs of other dogs. Plasma and urinary myoglobin and hemoglobin values, plasma potassium and phosphorus levels, and glomerular filtration rate and effective renal blood flow were determined. Following cross-circulation, 5 of 16 dogs died with hypotension and hyperkalemia and the kidneys of these dogs showed hydropic tubular degeneration and numerous protein casts. The 11 surviving dogs exhibited a transient impairment of glomerular filtration rate and effective renal blood flow which returned to normal within two weeks.

*Resident in Surgery.
**Professor of Surgery.

Effects of Restraint Stress on Gastric Secretion in the Rat

RENE MENGUY*

The American Journal of Digestive Diseases 5: 911-916, 1960

When rats were stressed by restraint in a wire jacket for 20 hours, hemorrhagic gastric erosions consistently developed in the glandular mucosa. Previously vagotomized rats were partially protected from stress ulcers, whereas hypophysectomy or adrenalectomy were without effect. Measurement of 6-hour gastric secretory output in rats submitted to the same restraint stress revealed a 94 per cent inhibition of gastric secretory activity in comparison with unstressed controls.

*Assistant Professor of Surgery.

FACULTY NEWS

Paul W. Smith, Ph.D. Accepts New Post

Paul W. Smith, Ph.D., has resigned from his full-time position on the staff of the Department of Pharmacology of the School of Medicine to accept an appointment as Chief of the Section on Biophysics of the Civil Aeromedical Research Institute of the Federal Aviation Agency. He will retain an active affiliation with the Medical School as Professor of Research Pharmacology.

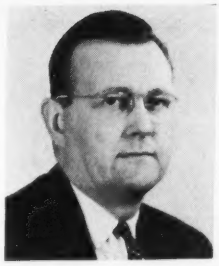
Doctor Smith came to the University of Oklahoma in 1941 as Assistant Professor of Pharmacology after having taught at the Universities of Tennessee and Illinois. He became an Associate Professor in 1945 and Professor in 1950, and served as Chairman of the Department from 1958 until January 1, 1961.

At the Civil Aeromedical Research Institute he will assist in the development of instrumentation for remote monitoring of physiologic functions by telemetry, as a part of a program designed to test physical fitness and performance characteristics in human subjects under actual working conditions. He will also continue his current researches on the effects of steroid hormones and the digitalis glycosides on the chemical constituency and work capacity of the heart.

Two Professors Join Biostatistical Unit

Two statistics experts from the Norman campus of the University of Oklahoma, instrumental in development of the Medical Center's Biostatistical Unit, have been appointed to part-time posts at the School of Medicine.

John Clark Brixey, Ph.D., O.U. professor of mathematics, was made consultant professor of mathematical statistics, and William Viavant, Ph.D., associate professor of computer science at Norman, now holds the medical school title of consultant associate professor of computer science.



HAIN

GOLDBERG

MUMMERY

Ten Appointees Added To Medical Center Staff

Raymond F. Hain, M.D., neuropathologist who recently moved to Oklahoma City from Seattle, Washington, is among new appointees to the part-time teaching staff of the University of Oklahoma School of Medicine. He was named associate professor of pathology.

Doctor Hain was certified in pathologic anatomy in 1951 and in neuropathology in 1956. A graduate of Jefferson Medical College, Philadelphia, he interned there and trained as a pathology resident and fellow at Providence Hospital and the University of Washington in Seattle and at Washington University, St. Louis. He took work in neuropathology at Montreal Neurological Institute, McGill University, Montreal, in 1950-51, then returned to the University of Washington School of Medicine, where he taught until coming here.

Three faculty newcomers are members of the Oklahoma City VA Hospital staff. They are: Ira Goldberg, Ph.D., and William James Mummery, Ph.D., instructors in medical psychology, and Carmen Eddythe Bloedow, M.D., clinical assistant in medicine. Both Doctor Goldberg, full-time VA research psychologist, and Doctor Mummery, staff psychologist in the Mental Hygiene Clinic, received their Ph.D. degrees from the University of Oklahoma last year. Doctor Bloedow, a graduate of Ohio State Medical School, has just completed a three-year residency at the O.U. Medical Center.

Among other appointments:

Joe E. Collins, M.D. (O.U., 1948), instructor in urology. Doctor Collins, who took his residency training at the Medical Center, returned here after practicing in Joplin, Missouri, the past three years.

Adrian A. Kyriakopoulos, M.D., (University of Athens, 1957), a research fellow in the O.U. Department of Medicine since 1956, named clinical assistant in medicine.

William Robert Collins, M.D., and Lindberg J. Rahhal, M.D., both 1953 graduates of the O.U. School of Medicine, appointed clinical assistant in ophthalmology and radiology, respectively.

Larson Russell Keso, D.D.S., M.S., (Washington University), named clinical assistant in orthodontics, Division of Dental Surgery. Charles Lee Reynolds, M.D., (Southwestern Medical School, 1949), clinical assistant in urology. Doctor Reynolds finished residencies at Southwestern last year.

Special Article

Experimental Studies on the Functional Capacities of Middle-Aged and Aging Persons

This study on functional and metabolic reserves is a part of the research program being conducted by the Civil Aeromedical Research Institute ("CARI") of the Federal Aviation Agency, presently located on the North Campus, University of Oklahoma.

BRUNO BALKE, M.D.

Bruno Balke, M.D., graduated from the University of Berlin in 1936. From 1950 to 1960, he was with the USAF School of Aviation Medicine at Randolph A.F.B. At the present time, he is engaged in research at the Civil Aeromedical Research Institute of the Federal Aviation Agency and is Research Professor of Physiology at the University of Oklahoma School of Medicine.

Doctor Balke is a member of the American Physiological Society, the Society of Experimental Medicine and Biology, the Aerospace Medical Association and the American College of Sports Medicine.

AT THE National Conference on the Medical Aspects of Sports, preceding the AMA Clinical Meeting in Dallas in 1959, I presented experimental evidence that the physical fitness status of our adult male population, on the average, is poor or, at least, below the level to be desired. More than 50 per cent of the American male population are lacking the functional and metabolic reserves to survive emergency situations such as were readily tolerated and overcome by the pioneering ancestors of a period not too many years in the past.

Such a statement, of course, was never expected to remain unchallenged and I was not surprised to learn about another "experiment": "Here"—I read in a letter from Keller, Texas—"we have done considerable research with ten pioneer men who crawled out of the hills the other side of Wautauga. We found that they couldn't survive Fort Worth freeway traffic overnight. Eight were struck down within the first hour, one was committed to the mental hospital at Wichita Falls, and the last was seen heading west, rapidly, in front of a 14-wheeler."

This story was told and signed by two educators. I saw no need for a reply because nobody is going to urge a backward development. All I wanted to emphasize was the rapidity with which vigor and vitality of a relatively young nation could become endangered by the modern life if its biologic consequences were sneaking up on us.

With all the emphasis on science and technique, and with the generally increasing contempt for physical activity, the natural instinct for physical play, apparently, is dwindling. The consequences of such attitude are not well understood and the final evolution of man, during the course of a peaceful and long-lasting overcivilization, is a matter of speculation. If all physical strain would be removed in the future: would mankind profit from saving energy? What would happen to physical and mental health and to the vitality of the Nation?

There is some experimental evidence that a relatively short period of complete rest and relaxation can have a dramatically detrimental effect on the capacity for compensatory regulations of the cardiorespiratory and metabolic systems. After a few weeks of voluntary bed-rest or after a few days of inactive floating in water the experimental subjects revealed all biologic signs of severe chronic fatigue.

The findings of Doctor J. Naughton, at the V. A. Hospital in Oklahoma City, that the work capacity of a great many doctors was not much superior to that of a certain group of bed-patients may indicate that a great number of professional medical people is not completely aware of the physiologic consequences resulting from lack of physical activity. That does not come as a great surprise since the philosophic concept that the wear and tear of daily life results in premature degeneration is preferred by many people to the theory that a structural involution follows diminution or cessation of functional work. Personally, I also would prefer the first theory—if the experimental evidence and the life experiences would not speak loudly for the latter concept.

Medical education emphasizes, as a necessary background for the prevention, treatment, and alleviation of diseases, the pathologic aspects of life. With proper methods and techniques it is possible to draw the dividing line between "normal" health and beginning disease. Usually, all further medical interest is then focused on the latter.

But isn't there sometimes a need to know more about how "normally healthy" a man might be? Isn't it sometimes of importance to know just how much an individual can be burdened by daily work loads to perform optimally for a long period of time?

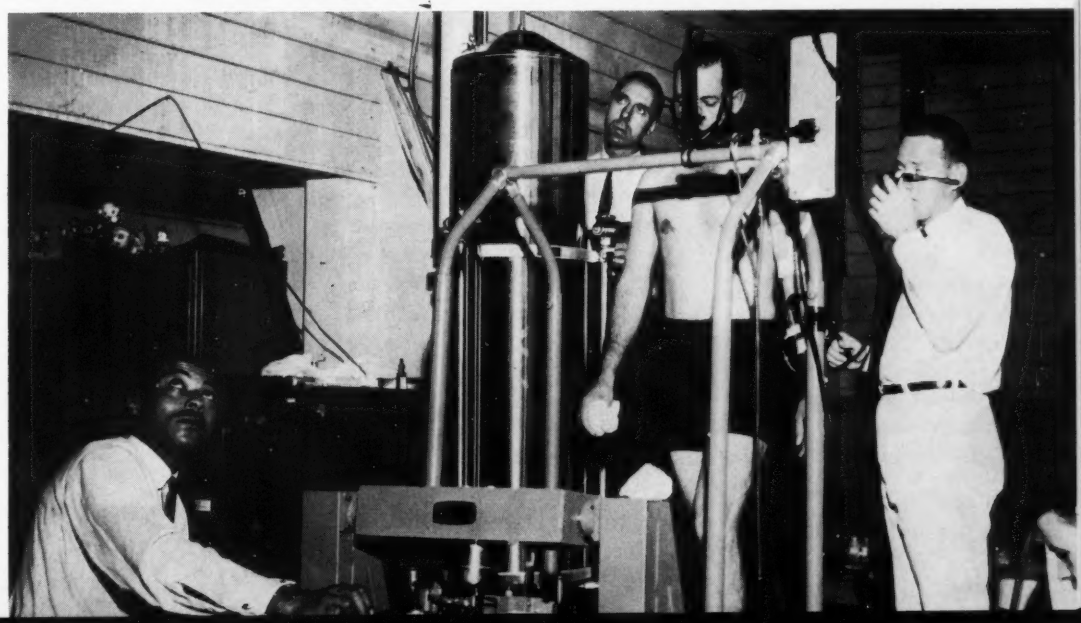
Undoubtedly, each individual, at a given time, has a certain biodynamic potential. This potential depends on the proper adaptive coordination of all automatic and systemic organic functions. The most important — because truly life-sustaining — functions are those concerned with supplying oxygen to the living cell. If oxygen supply becomes locally insufficient in less vital areas, there might just be local fatigue and, perhaps, local cessation of any further function. The damage might be reversible or not, depending upon duration of anoxia. But if a vital organ is hit by severe hypoxia, life itself dwindles like a candle under glass and within a very short period of critical anoxia it ceases completely.

The medical reader is asked to forgive this short dwelling on well understood principles. These platitudes were only meant to help to explain the performance physiologist's attitude of evaluating man's functional adaptive capacity, first of all by determining the potential range of circulatory and respiratory adjustments.

In a second thought he is concerned about the metabolic processes and the complex interplay of all functions for the attainment of the maximally possible energy expenditure. The latter, also called the "vita maxima," or the "aerobic crestload" is a fair indication of any man's functional re-

The motor-driven treadmill is designed to provide variable work intensity by changing speed or elevating grade. Standards of endurance are created here which may be applied to any job condition.

John Naughton, M.D., of Oklahoma City's Veterans Administration Hospital, is shown monitoring subject's pulse rate and blood pressure, while other investigators coordinate the treadmill controls and operate the spirometer.



The author is equipped with transmission devices which send telemetered physiologic signals to the receiving station while subject exercises. Present receiving equipment will permit monitoring of four men simultaneously.

serves and can be used to define, quite precisely, the optimum or maximum load level for daily work.

There is no short-cut for determining the biodynamic potential. No "static" or resting measurements and no measurements following a given exercise or other stressing procedure will turn the trick to furnish a reliable criterion of functional adaptive capacities. However unfortunate, only adequate stresses—and the best stress is physical exercise of gradually increased intensity —are useful for obtaining the data desired. Although there are almost as many testing procedures of working capacity as there are investigators in this field, the test described in the following is probably one of the most informative and most adaptive procedure in existence.

In CARI's laboratory a motor-driven treadmill is used as the instrument of choice for the assessment of the highest metabolic rate an individual can successfully and adequately cope with. For "normal" male subjects the walking speed is set to 3.4 m.p.h. Gradually, from minute to minute, the treadmill is tilted in its inclination, forcing the individual to walk at steeper and steeper grades uphill. The increments in grade are of consistent magnitude and the work intensity, thus, increases linearly. As a result, the subject's energy expenditure follows the demands. That means a stepped-up blood flow and an adaptation of pulmonary ventilation to the intensified requirements of gas exchange.

In order to monitor the test and to be able to determine at any moment the test subject's physiologic reactions to the imposed stress, measurements of pulse rate, blood pressure, respiratory rate and tidal volume are taken periodically at short intervals. More modern techniques, at the present in the state of development, may at a later date allow for remote monitoring of these and other essential physiologic functions by telemetry.

The testing procedure makes it possible to keep the imposed stress within any individual's physiologic limits and to determine his metabolic crest load. The latter is not only a yardstick of "physical fitness" in general but allows also for an estimation of the maximum energy demands which can be met during the routine work of everyday's life.

In experiments with several hundreds of men, in the age range from 17 to 65 years, a wide scale of physical performance capacity was established. The lowest point on this scale represented the average results from a group of hospital patients with chronic pulmonary disease.* These people were only able to raise their maximum energy expenditures to a level of six times the basal metabolic rate. A ten-fold increase was observed as the average of the entire male test population but athletes trained for sustained high energy output reached maxima equivalent to sixteen times the resting metabolism.

Several small groups were tested before, during and after various periods of increased physical activity. Middle-aged men with sedentary living habits improved their functional capacities by 25 per cent as the result of a ten-week course of daily "workouts," each of 30 to 40 minutes duration and consisting of the simplest, cheapest and most effective form of exercise: alternatingly

*Experiments accomplished in the V. A. Hospital, Oklahoma City, by Doctor John Naughton.

trotting and walking. This improvement was caused by an intensified vagal tonus with a reduction of pulse rate for any given work intensity, by an apparently increased stroke volume of the heart, by an augmented capacity for maximum oxygen intake, and by an increase of the maximum breathing capacity during work.

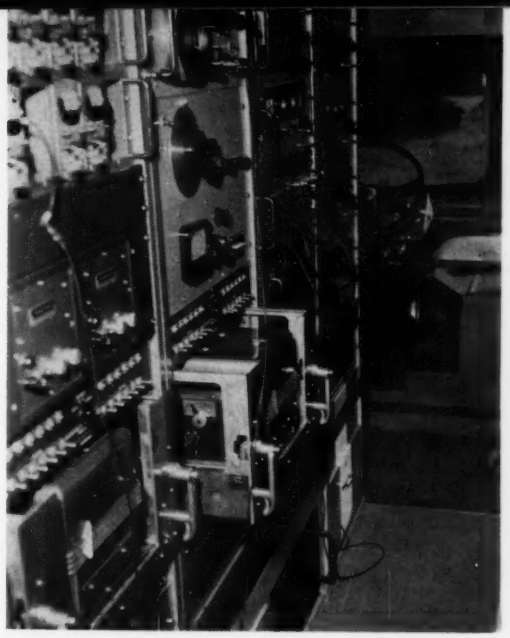
The biochemical co-investigator in these studies, Doctor James Green, found significant changes in the carbohydrate, fat and protein metabolism as a consequence of the physical training period, changes suggesting a better utilization of energy stores. During submaximal work of two hours duration the blood sugar level of the trained men remained fairly constant while it dropped significantly in the less trained men during the second hour of exercise.

The serum cholesterol level, on the other hand climbed higher, during work, in the well trained who apparently mobilized greater amounts of lipids and also utilized them: physical training was accompanied by a 10 to 20 per cent fall of the resting serum cholesterol levels.

A question of great interest has always been what fraction of the functional and metabolic potential could be considered a "safe" load for daily work. Treadmill experiments have shown that well-trained subjects tolerated a "50 per cent load" occasionally for 10 to 12 hours, and a "33 per cent load" for 8 to 10 hours on several consecutive days.

Untrained individuals, on the other hand, had to discontinue their "33 per cent load" —which was less than that of the former— after 3-4 hours because of "exhaustion." It appears quite realistic to consider a "20 to 25 per cent load" during a 6-8 hour on-the-job period as the safe margin for the daily work of "normal" individuals.

Another fact, brought out by these investigations, was that physical working capacity was by no means related to the process of growing older in years: professors surpassed young students, staff officers outperformed young basic trainees, etc. It all seemed to depend upon the regular activity level people usually were engaged in. Chronologic and physiologic age are not, by necessity, progressing parallel. And the best thing that can be said is: no time appears to be too late to improve on existing "poor" physical condition. There was even some evidence that certain findings usually considered as symptoms of aging—such as hypertension, angiospasm, undesired fat deposition, etc.—were alleviated after the individual had taken up and followed a regular program of intensified daily caloric expenditures.

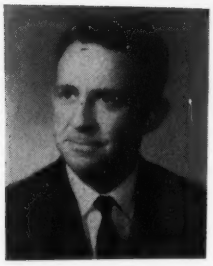


Pictured above is the truck-mounted receiving station for broadcasted physiologic signals, such as pulse rate, blood pressure, respiratory rate, body temperature and EEG.

More longitudinal studies on individuals throughout their life will give us the scientific information at what age certain physiologic capacities will begin to deteriorate. For many singular biologic parameters such knowledge may exist. The appearance time of the final downward sloping of the biodynamic potential, however, is not truly known yet. It must *not* occur during the "forties" and early "fifties." And even if it occurs afterwards there remains the question then if the "slowly deteriorating old man," physiologically seen, might not be younger still than his junior in years.

Using such procedures as described, and accompanying biochemical methods, as tools, the studies on the biodynamic potential might shed some light on the problems of aging.

PRESIDENT'S LETTER



Senate Bill No. 81 has been filed by State Senator Charles Wilson of Sayre, Oklahoma, and is now in committee. This Bill has come to be known as the Medical Examiner Bill. It would create a Board with authority to employ a State Medical Examiner and other personnel to investigate deaths due to questionable circumstances. The Bill spells out the authority for Court order of an autopsy in specific cases where permission cannot be obtained from the next-of-kin. The lack of such provisions in our present statutes has put physicians, and in particular pathologists, in an awkward position from time to time when asked or ordered by the Court to perform an autopsy to determine cause of death. It has turned out that the doctor performing the autopsy is not always in the clear from a legal standpoint even when doing so on Court order. In the most famous Oklahoma case of this general category to date, the Nanny Doss case in Tulsa, Leo Lowbeer, M.D., the pathologist at Hillcrest Medical Center, cannily took the additional precaution of obtaining a permit from Mrs. Doss before performing an autopsy on her deceased husband. Doctor Lowbeer suspected the deceased of having been poisoned by arsenic, and he later proved this true to the satisfaction of the Court. However, we all know such permission is oft times nigh to impossible to obtain. The Legislative Committee of the Oklahoma State Medical Association recommends strongly all support possible be given this Senate Bill No. 81 by doctors throughout the State.

Another bill in which the Legislative Committee has expressed interest and which concerns all physicians is a proposed "Good Samaritan" law, which protects physicians who render emergency care at the scene of an emergency, in good faith, relieving them of liability for civil damages "as a result of any acts or omissions" in rendering such care. Little or no progress has been made on this proposed bill to date because it has not been written up in acceptable statute form. Similar bills have actually been adopted in California and South Dakota. But since bills of a like nature were introduced and defeated last year in the States of Mississippi, New York and Virginia, particular care must be used to get the wording correctly legalistic.

Satisfactory liaison is being maintained with the Legislature. The Oklahoma County Medical Society has again made a great contribution to good relationships by furnishing a list of physicians who have volunteered their services to be on call for any emergency needs at the Capitol during this session. This list was duly transmitted to both the House and the Senate and gracious acknowledgement received from both groups by the undersigned.

Walter E. Brown, M.D.

WALTER E. BROWN, M.D.
President

Extensive clinical experience in the United States and Europe demonstrates that Lomotil provides prompt and positive symptomatic control of diarrhea.

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In the control of diarrhea, Lomotil offers safety, efficacy and greater convenience.

DOSAGE: The recommended initial dosage for adults is two tablets (2.5 mg. each) three or four times daily, reduced to meet the requirements of each patient as soon as the diarrhea is under control. Maintenance dosage may be as low as two tablets daily. Lomotil, brand of diphenoxylate hydrochloride with atropine sulfate, is supplied as unscored, uncoated white tablets of 2.5 mg., each containing 0.025 mg. ($\frac{1}{2400}$ grain) of atropine sulfate to discourage deliberate overdosage.

Recommended dosage schedules should not be exceeded.

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News

President Keeps Campaign Promise

Kennedy Introduces Health Plan for Aged

The nation will be hearing a lot about H.R. 4222 and S. 909 in the months to come.

President Kennedy asked Congress on February 9th for a vast, expensive health program, highlighted by a compulsory social security program for financing hospital care, nursing care and out-patient diagnostic services.

In a special message to Congress, the President also proposed federal scholarships for physicians and dentists, grants to bolster community nursing and hospital services, aid to medical and dental schools, a program to improve the health of children and youth, and increased medical research. But the spotlight of his interest was unquestionably focused on the aged care proposal.

The controversial amendment to the Social Security Law, entitled the Health Insurance Benefits Act of 1961, is slated to become one of the hottest domestic issues facing Congress. Last August, a similar amendment narrowly missed passage.

Mills Says No

Pointing up the stiff fight in prospect was the refusal of Chairman Wilbur Mills (D., Ark.) of the House Ways and Means Committee to introduce the new legislation. The Administration was finally forced to pick for its champion Representative Cecil King (D., Calif.), second ranking Democrat on the key committee, who introduced the measure on February 13th as H.R. 4222.

In the Senate, the proposal has been introduced by Clinton P. Anderson (D., N.M.), second ranking Democrat on the Senate Finance Committee and sponsor of last August's efforts to establish a health plan through the social security mechanism. The Senate has tagged the bill S. 909.

Provisions of the Bill

The proposal would amend the Social Security Law by adding a new title (XVI) under which in-patient hospital services, skilled nursing home services, home health services and out-patient hospital diagnostic services would be provided to any individual over age 65 who is entitled to monthly insurance benefits under the Social Security Law or the Railroad Retirement Act, whether or not he has elected to receive such monthly benefits.

Payment would be provided for the following services:

- *Up to 90 days of in-patient hospitalization in semiprivate accommodations, subject to a deductible of $10 for each of the first nine days, with a minimum deduction of $20 (beginning October, 1962).*
- *Up to 180 days of skilled nursing home services (beginning July, 1963).*
- *Home health services up to a maximum of 240 visits during a calendar year (beginning October, 1962).*
- *Out-patient hospital diagnostic services, subject to a deductible of $20 for each complete study (beginning October, 1962).*

"Units of Service" Formula

A "unit of service" formula would be applied to determine the combination of hos-

pital and nursing home days available. One day of hospital care would be equivalent to two days (units) in a nursing home and the maximum number of units authorized for a "benefit period" would be 150. Thus, a patient who used 90 days of hospital care would only be eligible for 120 days in a nursing home following his hospitalization.

The "benefit period" would correspond to the length of an illness, with the time measured from the first day of hospitalization. A new benefit period could not begin until 90 days after the patient left the hospital or nursing home.

Hospital Care

Included as hospital benefits are: bed and board; nursing and related services; customary medical social services; drugs, biologicals, supplies, appliances and equipment for use in the hospital; and, diagnostic and therapeutic items or services used in the hospital.

Excluded would be medical or surgical services, except in the fields of pathology, radiology, physiatry, and anesthesiology. Interns' and residents' services would be covered where the physician is under an approved teaching program.

Nursing Home Service

Nursing home coverage under the bill is defined as services provided by a "skilled" nursing facility, after transfer from a hospital.

Specific services covered are: bed and board; nursing care; physical, occupational or speech therapy; medical social services; drugs, biologicals, supplies, appliances and equipment which are furnished for use in the facility; and, other services necessary to the health of the patient and generally supplied by such institutions.

Home Health Care

Home health services would be those furnished to an individual, who is under the care of a physician, by a home health agency. A home health agency is defined as a tax-exempt public or private nonprofit organization which is primarily engaged in providing skilled nursing care or other therapeutic services, and whose policies are established and controlled by professional personnel, including one or more physicians.

Part-time or intermittent nursing care would be covered, as would physical, occupational and speech therapy, medical social services, medical supplies and appliances (other than drugs and biologicals), and certain homemaker's services.

Out-Patient Diagnosis

Out-patient hospital diagnostic services would be those services which are furnished to an individual as an out-patient by a hospital, or by others under arrangements made by a hospital.

Policies and Regulations

The bill declares it to be a Congressional policy that home care, nursing home care and hospital care be used in that order, on the basis of meeting the need with the least expensive service.

Services would be provided upon written application of the patient, which must be certified as a medical necessity by a licensed doctor of medicine or osteopath. Recertification of the need *could* be provided by regulations.

The need for in-patient hospital or nursing home services in excess of 30 days would have to be reviewed by a "hospital utilization committee" or "nursing facility utilization plan," as the case may be.

The bill contains a prohibition against interference by any federal official with the practice of medicine, or in the selection, tenure or compensation of any provider of service, or to exercise supervision or control over the operation of any provider of service, except as specifically provided.

Payment

Payment for services would be based on the "reasonable cost" of services and regulations would prescribe methods of determining such costs.

The provider of services would have to sign an agreement not to charge the patient or other persons for services covered under

the law, except for seeking recovery of the authorized deductibles, or for extra services not provided at government expense.

Other Provisions

H.R. 4222 would also increase the maximum cash social security benefit from $127 per month to $130 per month. The maximum family benefits would be raised from $254 to $260 per month.

Financing

To finance the aged care program, social security taxes in 1962 would be increased from the present 6% (3% employee—3% employer) on a tax base of $4800 to 6½% (3¼% employee—3¼% employer) on a tax base of $5,000. This ½% increase and enlargement of the tax base by $200 would mean an increase in annual social security taxes from a total of $288 to $325.

School Aid

In his health message, the President also proposed a 10-year $750 million medical and dental school construction program and federal scholarships for medical and dental students.

Under the scholarship plan, each institution would be entitled to an amount equal to $1,500 multiplied by 25% of the freshman class. In subsequent years, these scholarships would be available to each entering class, quadrupling the original financial outlay.

The President also urged a cost of education grant which would equal an amount of $1,000 multiplied by 25% of the freshman class. He further suggested extension of the research grant programs for three years, with an increase in the annual appropriation from $30 million to $50 million.

Community Services

Mr. Kennedy asked for the establishment of a permanent program under which grants would be made to the states to improve community services to patients outside the hospital. In addition, he recommended the establishment of a National Institute of Child Health and Human Development.

Annual Meeting Business Affairs Emphasized

"The resolutions which we introduce and consider at our state meeting are of far more consequence than is realized by the average member of organized medicine."

So said Marshall O. Hart, M.D., Speaker of the OSMA House of Delegates, in discussing plans for the Annual Meeting of the House of Delegates next May 7th.

"The actions of our policy-making body let the people and lawmakers know what our thinking is concerning vital problems in professional and community life," Doctor Hart added. He urged county medical societies to exercise mature, considered judgment in evaluating the complex problems facing medicine today, and to draft well-researched resolutions for submission to the House of Delegates.

Call for Resolutions

All county medical societies were previously contacted about the preparation of resolutions and told that they must be sent to the association headquarters by April 1st.

The House of Delegates will formulate association policy on the basis of these resolutions and the reports of association committees. When indicated, proposals approved at the state association level will be transmitted to the AMA meeting in June, and may possibly form the basis of national medical policy.

"Oklahoma's AMA Delegates have been quite successful in the past in getting resolutions through the national House of Delegates," Doctor Hart said, "and I hope that our state meeting this Spring will provide them with material which will make a worthwhile contribution to the national picture."

The Meetings

The Oklahoma House of Delegates will meet at 10 a.m. in the Pompeian Room of Tulsa's May Hotel, May 7, 1961. On June 25th, the AMA body will convene at the Statler-Hilton Hotel in New York City.

In keeping with a previous OSMA House of Delegates policy, advance information on business items scheduled for the May meeting will be printed in the April issue of the association journal, which has been designated as the annual meeting issue.

Hospitals Wage War On Welfare Program

Social welfare philosophy is being severely tested in Oklahoma as a result of "Operation Echo," a campaign of the Oklahoma Hospital Association to recover full per diem costs on hospitalized indigent and medically indigent public welfare recipients.

At stake is the question of whether or not hospitals should be *completely* reimbursed for "charity" care through tax funds.

The Oklahoma Hospital Association feels that the present Department of Public Welfare system is unfair to the hospitals and the paying patients. Hospitals are now receiving audited per diem costs, but a current ceiling of $20.93 has been set by the Department, based on a formula derived from per diem rates at University Hospital.

Administrators of hospitals claim that many hospitals have costs higher than the maximum payable and, what is worse, there is no payment at all received for patients who stay in the hospital beyond the twenty-one day limit. To compensate for an alleged over-all deficit of 20%, they say their only recourse is to jack up the room charges for private-pay patients. This, they refer to as a "sick-tax."

As a separate but related grievance, hospital administrators challenge the regulation which prevents them from billing the patient directly for any expenses not fully paid for by the government agency. Now they must try to recover such deficits from relatives or friends of the patient. If the hospitals can't have full costs paid by the welfare department, they want authorization to bill the patient directly for any difference between the government payment and the hospital's billed charges.

Modus Operandi

To accomplish their goals, the hospital administrator group began in January holding regional meetings with hospital governing boards, urging the board members and community leaders to prevail upon the welfare department, state legislators and the governor to increase payments to hospitals.

They have also marshalled hospital auxiliaries and have launched direct mail campaigns at state legislators and physicians.

The mailing to the physicians of Oklahoma went out on February 2. Neither the letter nor the enclosed brochure was channeled through the Oklahoma State Medical Association for its approval and endorsement.

Reactions

L. E. Rader, state welfare director, responded to the campaign by stating that adequate funds were not available to meet hospital demands for full reimbursement. Furthermore, he said it was against Federal regulations under the matching-fund program to permit direct billing of the patients for services purchased by the department. He said he had received word from Federal officials that such an action would jeopardize Federal participation.

Oklahoma's lawmakers also reacted to the promotion. Bills have been introduced in both the Senate and the House of Representatives to freeze the maximum welfare department per diem payments to correspond to the University Hospital formula.

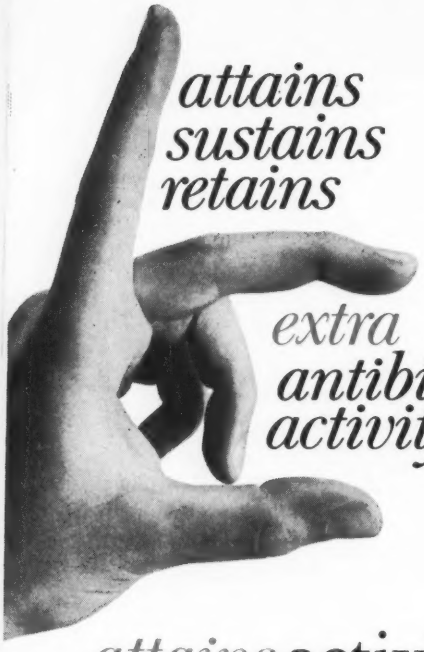
Some legislators are reported to have seriously questioned paying more for two hospital days than recipients receive as a monthly food allowance. Whether it's a case of comparing apples to oranges or not, some legislators are wondering if hospitals aren't already getting too large a piece of the welfare pie.

Philosophy

Who is primarily responsible for charity care seems to be the basic question arising from the controversy.

The Oklahoma State Medical Association's Committee on Welfare has ruled that tax-supported programs should be employed as an ultimate resource, to the extent that individual family and community responsibilities should be discharged before the state and Federal governments are called upon.

The medical group has not entered into the fray, however, since its opinion has not been sought by the hospital association either before or during the campaign.



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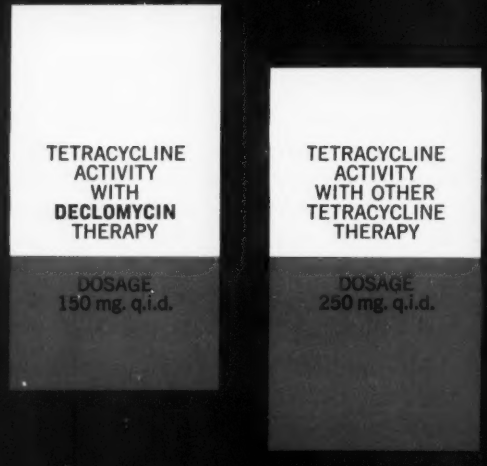
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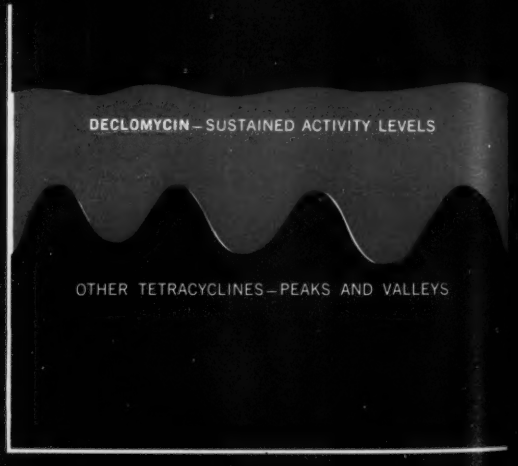

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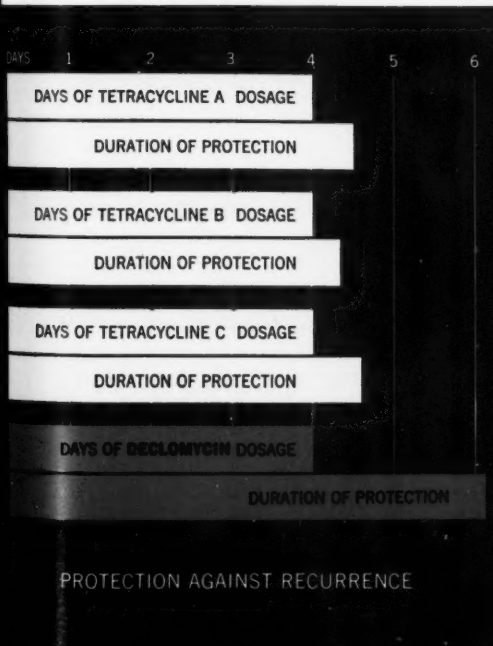
DAYS 1 2 3 4 5 6
DAYS OF TETRACYCLINE A DOSAGE
DURATION OF PROTECTION
DAYS OF TETRACYCLINE B DOSAGE
DURATION OF PROTECTION
DAYS OF TETRACYCLINE C DOSAGE
DURATION OF PROTECTION
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SYRUP, 75 mg./5 cc. teaspoonful (cherry-flavored), bottles of 2 and 16 fl. oz. **Dosage:** 3 to 6 mg. per pound body weight per day—divided into 4 doses.

PRECAUTIONS—As with other antibiotics, DECLOMYCIN may occasionally give rise to glossitis, stomatitis, proctitis, nausea, diarrhea, vaginitis or dermatitis. A photodynamic reaction to sunlight has been observed in a few patients on DECLOMYCIN. Although reversible by discontinuing therapy, patients should avoid exposure to intense sunlight. If adverse reaction or idiosyncrasy occurs, discontinue medication.

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Kerr Will Address AMA Conference

Oklahoma's Senator Robert S. Kerr will appear as a featured speaker in Chicago, March 18-19, when the American Medical Association holds a medical legislative conference at the Pick-Congress Hotel.

The main agenda item for the meeting will be H.R. 4222, the controversial Health Insurance Benefits Act of 1961. Kerr, as co-author of a state-federal matching fund program to provide health care for the indigent elderly, has steadfastly opposed the use of the Social Security mechanism to fnnance health care, as is provided in H.R. 4222.

His own legislative proposal, known as the Kerr-Mills Bill, became law last September, and has since been implemented in Oklahoma and four other states. Forty-one other states have introduced legislation, or are drafting bills to provide the necessary state financial support. Properly implemented, the program not only expands health care benefits for old age assistance recipients, but also covers borderline individuals who cannot meet their health care costs.

In contrast to the Kerr-Mills bill which is designed to care for those who cannot care for themselves, the Social Security legislation would make it a compulsory matter without regard to financial need. The bill offers all Social Security beneficiaries in-patient and out-patient benefits at an eventual annual cost of over $2 billion.

Opposes New Bill

The senior Senator from Oklahoma will address a luncheon assembly of AMA and state medical association officers on March 18th. He is expected to reiterate his legislative opposition to the Social Security bill now pending in Congress.

Previously, on January 18th in Oklahoma City, he told members of the Oklahoma Association of Health and Accident Insurors that he could not go along with the proposed legislation. Furthermore, he said he firmly believed that it should be the right of every physician to choose his own patients, and the right of every patient to choose his own physician.

At the same meeting, he paid tribute to the Oklahoma State Medical Association for its help during the Kerr-Mills legislative campaign. He singled out OSMA President Walter E. Brown, M.D., and Executive Secretary Dick Graham for special words of appreciation. The pair had attended the meeting on invitation from the insurance men.

AMA Plan

To meet the test of the forthcoming legislative threat, the AMA is expected to swing into a full-scale public relations campaign, in cooperation with its constitunent societies and other business and pofessional groups. The purpose of the Chicago meeting is to brief state association leaders on the issues involved and the techniques to be employed to meet them.

In recent encounters with proponents of the Social Security measure, the AMA has pleaded for time; time to give the four month's old Kerr-Mills bill a chance to prove its effectiveness.

Paradoxically, Social Security supporters have already branded Kerr's bill a flop because it has not been fully implemented at the state level, while their own bill will admittedly require two years for full implementation.

Oklahoma Representatives

Representing the Oklahoma State Medical Association at the AMA meeting will be: Doctor Brown and Mr. Graham; Clint Gallaher, M.D., President-Elect; John E. McDonald, M.D., member of the AMA Council on Legislative Activities; J. R. Stacy, M.D., Chairman of the OSMA Council on Public Policy; and, R. Q. Goodwin, M.D., Alternate Delegate to the AMA and member of the Council on Public Policy.

Lawton Hosts Second OSMA Regional Meeting

Lawton's Westside Country Club was the site of the Oklahoma State Medical Association's Second Regional Postgraduate Meeting, held on February 28th. Local arrangements were handled by L. M. White, M.D., Lawton, member of the OSMA's Postgraduate Education Committee.

The enthusiasm of Southwestern Oklahoma physicians for the "hometown" program was evidence by an attendance of 42. Registrants were treated to a four hour afternoon and evening presentation on "The Lung," for which they are eligible to receive an equal number of hours of Category I credit from the American Academy of General Practice.

Conducting the joint project of the OSMA and the medical school were lecturers Gilbert S. Campbell, M.D., who spoke on "Respiratory Acidosis"; Warren L. Felton, M.D., who spoke on "Surgical Complications of Pulmonary Infections"; Harold G. Muchmore, M.D., who presented "Recent Advances in Viral Respiratory Diseases"; and, James F. Hammarsten, M.D., whose presentation was on "Pathophysiology of Emphysema."

The program which began at 4:00 p.m., featured basic science, diagnostic and therapeutic considerations. After two hours of instruction, a dinner was held at the club, followed by an additional hour of instruction and a closing hour of discussion. A registration fee of $7.50 covered the complete educational program and the dinner.

Endorsed by Delegates

The Lawton meeting, its predecessor in Ponca City, and future meetings of this type were approved by the House of Delegates last Spring. According to R. R. Hannas, M.D., Chairman of the Council on Postgraduate Education from Sentinel, "The response to these regional meetings indicates that the postgraduate series is filling an unmet educational need. The whole purpose is to bring quality postgraduate courses close to home, thereby conserving the physicians' time."

Participants

Attending the Lawton event were: C. C. Allen, M.D., Frederick; Donald A. Angus, M.D., Lawton; Howard Angus, M.D., Lawton; Frank H. Austin, M.D., Lawton; H. R. Bender, M.D., Lawton; James H. Bushart, M.D., Lawton; Avalo V. Caldwell, M.D., Lawton; Hugh M. Conner, M.D., Cyril; E. T. Cook, M.D., Anadarko; Ross P. Demas, M.D., Lawton; John Eldard, M.D., Ft. Sill; John H. Ennis, M.D., Cyril; L. W. Ferguson, M.D., Lawton; Leslie T. Hamm, M.D., Lawton; R. R. Hannas, M.D., Sentinel; Forest D. Harris, M.D., Lawton; J. T. Hicks, M.D., Lawton; R. G. Johnson, M.D., Frederick; William P. Jolly, M.D., Lawton; F. David Kalbfleisch, M.D., Lawton;

John A. Lupas, M.D., Lawton; Lloyd McArthur, M.D., Lawton; Chesley M. Martin, M.D., Elgin; William Matthey, M.D., Lawton; Royce B. Means, M.D., Lawton; Lester L. Moline, M.D., Lawton; W. B. Moran, Preceptee, Altus; N. D. Owrey, M.D., Lawton; Lee Pullen, M.D., Waurika; Cooper D. Ray, M.D., Altus; Bruce E. Rabuck, M.D., Ft. Sill; H. C. Smith, M.D., Lawton; C. N. Talley, M.D., Marlow; L. M. White, M.D., Lawton; Walter Wicker, M.D., Lawton; F. L. Worthen, M.D., Lawton; and Don Blair, Oklahoma City.

Muskogee Picked for Next Postgraduate Meeting

Pursuing his plans to conduct additional regional postgraduate education meetings before May, Doctor R. R. Hannas, Chairman of the Council on Professional Education, has announced that the next meeting will be held in Muskogee on April 18th.

The program will be a repeat of the one held January 24th in Ponca City, which covered basic science, diagnostic and therapeutic considerations of the kidney.

Conducting the course will be a team of instructors from the University of Oklahoma School of Medicine; Doctors John P. Colmore, Robert Lindeman and W. O. Smith. Their presentations will be designed to appeal to general practitioners and specialists alike.

The program will begin at 4:30 p.m. After two hours' instruction, a dinner will be held, followed by an additional hour of lecture and an hour of discussion. Price will be $7.50, which includes the dinner and tuition.

Special 'Disaster' Journal Coming

The May issue of the OSMA Journal will be completely devoted to the subject, "Disaster Medical Care."

According to William Reiff, M.D., Chairman of the Association's Disaster Medical Care Committee, "This special issue of the *Journal* is an effort to place proper emphasis on medical preparedness by collecting under one cover the basic information needed by physicians, individually and collectively, to meet a major medical emergency."

"While the issue will contain timely information," he said, "it will also serve as a compact reference item. The committee and the *Journal's* Editorial Board hope that the magazine will be read by every state physician, then retained in his permanent library."

State and national authors are now submitting articles on such subjects as: Thermonuclear War—How to Win One; The Communist Mind; National, State and Local Civil Defense Plans; Small Community Organization; Manpower Training; Role of the Red Cross; Sorting and Treatment of Mass Casualties; War Surgery; Thermal Burns; Radiation; and, Chemical Warfare.

This red-orange and black cover, featuring the Nike-Zeus defensive missile, has been especially prepared for the May Journal.

Various news items will also carry out the overall theme, and rosters of key Oklahoma personnel will be presented for reference.

"The magazine will be printed in sufficient quantity for extra distribution to civic officials and opinion leaders throughout the state, as well as to all major news media," Reiff said.

The 160 acre lake pictured above is one of many now available for lease. It is situated near Weatherford.

Oklahoma Lakes for Lease or Sale

Many Oklahoma lakes which have been built or are planned for construction under the Federal Watershed Protection and Flood Prevention Act are being offered for lease or sale through the Bureau of Indian Affairs.

While these reservoirs are primarily intended for flood control, the government permits surface use of the water for recreational purposes. Since many of the lakes are situated on restricted Indian land, the Anadarko office of the Bureau is assisting the land owners in acquiring short or long-term recreational leases, or in selling the lakes in some instances.

Physician-sportsmen may receive detailed information on such hunting and fishing sites by contacting the Bureau of Indian Affairs, Anadarko Area Office, Branch of Realty, Anadarko.

Big Program

Dating back to 1936 when Congress authorized the development of eleven river basins in the nation, Oklahoma has been a forerunner in flood control construction. The Washita River basin, one of the original eleven studied, has been authorized 783 reservoirs, 376 of which have already been built.

Under 1954 amendments to the legislation, authorizing reservoirs outside the Washita basin, many additional lakes are being built, and a total of 517 are planned.

Physician Questions Hospital Staff Vacancies

Reduction in the number of foreign medical graduates in this country has little to do with the growing number of unfilled hospital house staff positions, a former medical school dean said recently.

The unfilled positions result because more internships and residencies have been approved than are really needed or can actually be filled—and not because the number of foreign graduates is decreasing, Willard C. Rappleye, M.D., said in *Hospitals*, Journal of the American Hospital Association.

Doctor Rappleye, now president of the Josiah Macy Jr. Foundation, New York, was formerly dean of Columbia University College of Physicians and Surgeons.

A program to require foreign medical graduates to pass an examination given by the Educational Council for Foreign Medical Graduates is now in effect and has produced the charge that its implementation will produce a deficit in the number of physicians available to fill house staff positions in United States hospitals.

Approximately 12,000 foreign graduates now occupy about 33 per cent of the house staff positions in the country, he said.

The Educational Council for Foreign Graduates, supported by several major medical, hospital and health organizations, was set up to promote educational opportunities for foreign graduates and to make sure that they reach a level of attainment comparable to graduates of United States schools.

Qualification tests have been given at intervals both in the United States and abroad. The most recent test in September 1960, was taken by 8,713 graduates, of whom 71 per cent were certified.

The American Medical Association and the American Hospital Association ruled that as of December 31, 1960, hospitals must remove unlicensed or uncertified graduates from patient care situations or face loss of approvals. The physicians who were removed from patient care situations may take the next examination, scheduled for April 4. In the meantime, many hospitals have set up educational courses for these physicians, with the aim of preparing them for the examination.

The real problem of house staff positions lies in the fact that the number of available internships (13,032) and residencies (30,733) far exceeds the number of graduates of American medical schools (7,081 in 1960). And too many of the positions, according to Doctor Rappleye, are now "intended and designed more as service functions for the staff and hospital than for education purposes," their real function.

Internship and residency programs must be turned into real educational programs—both for graduates of American and foreign medical schools. The programs for foreign graduates urgently need "a long-term, imaginative approach," especially in terms of meeting America's promises of aid to under-developed countries, he continued.

Most foreign graduates are expected to return home, where they will organize and improve medical education and service. Thus their educational programs here should be geared to such an aim, Doctor Rappleye said.

The over-all question of staffing American hospitals must also be solved. Temporarily, it may be necessary for hospitals to set up rotating programs whereby the attending physicians remain on call for the entire hospital on weekends and nights.

The most logical solution to the problem, Doctor Rappleye believes, is "probably employment of well qualified recent graduates on a full-time or part-time basis by the hospitals." Such young physicians can remain in the positions for several years while establishing themselves in the community.

By having such staff members, the intern and residency programs can then become truly educational programs, he said.

SW Surgical Congress Meets Next Month

The thirteenth annual meeting of the Southwestern Surgical Congress will be held April 1-13 at the Park Plaza Hotel, St. Louis.

Headlining the list of guest speakers are Warren H. Cole, M.D., Professor of Surgery at the University of Illinois; Henry K. Ransom, M.D., Professor of Surgery at the University of Michigan; O. H. Beahrs, M.D., Assistant Professor of Surgery at the University of Minnesota; and, Louis T. Byars, M.D., Associate Clinical Professor of Surgery, Washington University.

As an innovation to the normal scientific program, April 13th will be designated as "Clinical Day." The day will consist of selected papers of clinical interest, operative clinics and tumor clinics, all under the direction of C. Rollins Hanlon, M.D., Professor of Surgery at St. Louis University, and Carl A. Moyer, M.D., Bixby Professor of Surgery at Washington University.

The scientific program will also include panel discussions on the subjects "What's New In Surgery?" and "Surgery in Sigmoid Diverticulitis."

A break in the program will occur on Tuesday afternoon, April 11th, when members and guests will travel to historic Grants Farm for a social hour sponsored by Anheuser-Busch.

On Wednesday evening, April 12th, the President's Banquet will be held, honoring Howard D. Cogswell, M.D., Tuscon, Arizona.

The Council of the Congress will meet prior to the convention, on Sunday morning, April 9th. The Annual Executive Session for fellows of the Congress will be held Wednesday, April 12th, with all members urged to attend this business meeting.

Hotel reservations should be secured by writing direct to the Park Plaza Hotel, St. Louis, making reference to the Congress meeting.

What's Your Hobby, Doctor?

The DOCTOR'S HOBBY SHOW has become one of the outstanding attractions at the OSMA ANNUAL MEETING. A project of the Woman's Auxiliary, the show offers physicians an excellent opportunity to display the products of their leisure time. If you have a hobby, don't keep it a secret . . . Show your colleagues what you can do . . . APPLY NOW!

Doctor's Hobby Show

O.S.M.A. Annual Meeting

Mayo Hotel

Tulsa, Oklahoma

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55th ANNUAL MEETING

OKLAHOMA STATE MEDICAL ASSOCIATION

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2440 E. 26th Place
Tulsa 14, Oklahoma

State Co-Chairmen—Mrs. Herbert Forrest
4340 South Atlanta Ave.
Tulsa, Oklahoma

Mrs. W. B. Renfrow
2721 N.W. 33rd
Oklahoma City, Oklahoma

Reuther to Appear Before GP's in Miami

What is medicine's future—in the eyes of labor, management, the farmer and the profession itself? How do the leaders of these major economic and social forces view medicine today, and what role do they see for it tomorrow?

To bring their viewpoints together in a microcosmic preview, the American Academy of General Practice will open its Annual Scientific Assembly with a panel discussion featuring Walter Reuther, President of the United Auto Workers, Doctor E. Vincent Askey, AMA chief, and three other national figures from the Farm Bureau, Blue Shield and U.S. Steel.

More than 3,500 family doctors are expected to attend the April 17-20 meeting at Miami Beach's auditorium and convention hall. The Scientific Assembly is designed to re-emphasize basic medicine and preview new horizons for the nation's general practitioners.

Scientific Program

Scientific lectures will cover a wide spectrum of medical experience. Among second-day features will be a panel discussion on "Trauma of the Extremities" and lectures on "The Female Hormones" and "Radiation and Pregnancy." The third day will open with "Diseases of Medical Progress" and later will feature "Effects of Exercise on Cardiacs," "Living With Cancer" and "Tumors of the Skin." The third day's lectures will include "Common Ear Problems" and a panel discussion, "Adolescent and Post Adolescent Problems." Many of the lectures will be borne out graphically in the scientific exhibits, of which there will be more than 120.

Business

Preceding the scientific assembly will be the annual meeting of the Academy's policy-making Congress of Delegates. It will convene at 2 o'clock Saturday, April 15, in the Eden Roc hotel. Delegates from all 50 states, Puerto Rico and the District of Columbia will meet until noon Monday, April 17, when the scientific sessions open.

On Wednesday, April 18, the President's reception and dance will climax the Assembly's social activities. Just prior to this event, the President-Elect, Doctor Floyd C. Bratt, Rochester, New York, will receive the gavel from outgoing President Doctor John G. Walsh, Sacramento, California.

E. A. Johnson, M.D., Made Honorary-Life Member

At a recent Valentine dinner meeting of the Choctaw-Pushmataha Medical Society, E. A. Johnson, M.D., Hugo, was awarded an Honorary-Life Membership in the Oklahoma State Medical Association.

On hand to make the presentation was W. A. Hyde, M.D., OSMA Councilor from Durant. The nominating citation was read to the group and Doctor Hyde spoke warmly of his personal admiration of Doctor Johnson.

As an added tribute to the pioneer physician, the society presented Doctor Johnson with a brass vase and a special valentine.

At the same meeting, H. D. Wolfe, M.D., was named President for 1961 and William Woodruff, M.D., was elected to the office of President-Elect.

Oklahoma Chapter AAGP Names Officers

Harlan Thomas, M.D., Tulsa, took office as president of the Oklahoma Chapter of the American Academy of General Practice during the group's recent annual meeting. Other officers include Nolen Armstrong, M.D., Oklahoma City, vice-president and W. R. Cheatwood, M.D., Duncan, president-elect.

Since the founding of the Oklahoma Chapter in 1947, the group has grown to a total membership of 354.

The next annual meeting of the chapter will take place in Tulsa at the Tulsa Hotel, January 4-5, 1962.

COUNTY MEDICAL SOCIETY OFFICERS

of the

Oklahoma State Medical Association

SOCIETY	PRESIDENT	SECRETARY-TREASURER
ATOKA-BRYAN-COAL	B. B. Coker, M.D. Durant	Raymond L. Engles, M.D. Durant
BECKHAM	William G. Husband, M.D. Elk City	William Leebron, M.D. Elk City
BLAINE	(not reported)	Virginia Curtin, M.D. Watonga
CADDO	Marshall H. Ingram, M.D. Anadarko	G. E. Haslam, M.D. Anadarko
CANADIAN	Kenneth Peacher, M.D. El Reno	O. J. Hake, M.D. El Reno
CARTER-LOVE-MARSHALL	J. F. York, M.D. Madill	Claude H. B. Brown, M.D. Ardmore
COOKSON HILLS	C. T. Morgan, M.D. Tahlequah	Bob G. Mitchell, M.D. Sallisaw
CHOCTAW-PUSHMATAHA	Henry D. Wolfe, M.D. Hugo	Elizabeth Fleming, M.D. Hugo
CLEVELAND-McCLAIN	W. G. Long, M.D. Purcell	Gladys Smith, M.D. Norman
COMANCHE-COTTON	J. T. Hicks, M.D. Lawton	Forest D. Harris, M.D. Lawton
CRAIG-OTTAWA	Wiley G. Chestnut, M.D. Miami	H. W. Wendelken, M.D. Miami
CREEK	O. H. Patterson, M.D. Sapulpa	Gerald Zumwalt, M.D. Sapulpa
CUSTER	Ralph Simon, M.D. Clinton	Dayton Royse, M.D. Weatherford
EAST CENTRAL	Emil F. Stratton, M.D. Muskogee	Benjamin H. Gaston, M.D. Muskogee
GARFIELD-KINGFISHER	Avery B. Wight, M.D. Enid	Roscoe C. Baker, M.D. Enid
GARVIN	James Virgil Simmering, M.D. Wynnewood	Hugh H. Monroe, M.D. Pauls Valley
GRADY	Harvey D. Elkouri, M.D. Chickasha	Sam Davis, M.D. Chickasha
GRANT	Robert W. Choice, M.D. Wakita	F. P. Robinson, M.D. Pond Creek
GREER	Tom L. Wainwright, M.D. Mangum	J. B. Hollis, M.D. Mangum
HUGHES-SEMINOLE	D. H. Cramblet, M.D. Holdenville	H. V. Schaff, M.D. Holdenville
JACKSON	Cooper D. Ray, M.D. Altus	Joan K. Hiett, M.D. Altus
JEFFERSON	Lee Pullen, M.D. Waurika	Wm. A. Heflin, M.D. Ryan
KAY-NOBLE	Art Brown, Jr., M.D. Perry	C. H. Cooke, M.D. Perry
KIOWA-WASHITA	Aubrey E. Stowers, M.D. Sentinel	L. G. Livingston, M.D. Cordell
LeFLORE-HASKELL	C. S. Cunningham, M.D. Poteau	K. G. Lowe, M.D. Poteau
LINCOLN	Harold Baugh, M.D. Meeker	Ned Burleson, M.D. Prague

LOGAN	L. H. Ritzhaupt, M.D. Guthrie	Joseph R. Henke, M.D. Guthrie
McCURTAIN	(not reported)	Thomas E. Rhea, M.D. Idabel
MURRAY	W. D. DeLay, M.D. Sulphur	Robert S. Davis, M.D. Sulphur
NORTHWESTERN	Rhonald A. Whitneck, M.D. Woodward	M. C. England, M.D. Woodward
OKFUSKEE		
OKLAHOMA	Richard E. Carpenter, M.D. Oklahoma City	Harrell C. Dodson, M.D. Oklahoma City
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PAYNE-PAWNEE	Haskell Smith, M.D. Stillwater	Walter L .Honska, M.D. Stillwater
PITTSBURG	J. W. McCauley, M.D. McAlester	H. C. Wheeler, M.D. McAlester
PONTOTOC	Carl D. Osborn, M.D. Ada	O. M. Welborn, M.D. Ada
POTTAWATOMIE	Robert B. Zumwalt, M.D. Tecumseh	Clinton Gallaher, M.D. Shawnee
ROGERS-MAYES	Clarence B. Pinkerton, M.D. Pryor	Orville U. Holt, M.D. Claremore
STEPHENS	R. H. Mayes, M.D. Duncan	J. P. Keller, M.D. Duncan
TEXAS-CIMARRON	Robert Lee Cozine, M.D. Texhoma	Larry L. Lowrey, M.D. Guymon
TILLMAN	William G. Harvey, Jr., M.D. Frederick	Jack D. Honaker, M.D. Frederick
TULSA	Wendell L. Smith, M.D. Tulsa	Dixon N. Burns, M.D. Tulsa
WASHINGTON-NOWATA	John E. Scott, M.D. Bartlesville	Robert G. Allen, M.D. Bartlesville
WOODS-ALFALFA	I. F. Stephenson, M.D. Alva	C. A. Traverse, M.D. Alva

Britons Go to Graduated Health Tax

An alarming analogy was drawn in an editorial appearing in the *Chicago Tribune* of February 11th. The writer compared the evolution of Britain's National Health Service to the blossoming Social Security system in the United States.

Recently, British Conservatives have sought another increase in taxes to support their $2.5 billion per year health program. Nearly $2 billion of this amount is now coming out of general taxes, and the modest increase in the social security take will only relieve general revenue pressure by $182 million annually.

Since periodic increases in social security taxes have not kept pace with skyrocketing costs, the plan now is to adjust the base for social security taxes according to each individual's income. Thus, beginning in April, Britain will have a graduated health tax.

Current laws extending U.S. Social Security plans call for a bite of 9% of payroll by 1969. If health care and other liberalizations are added, the amount will reach 10% by 1969. British experience indicates that the health program will run at a loss, bringing about further increases and, eventually, a graduated tax.

Deaths

Finis W. Henderson, M.D.
1879-1961

Finis W. Henderson, M.D., 81-year-old, retired Tulsa physician, died January 18, 1961 in Tulsa.

A native of Killeen, Texas, Doctor Henderson received his medical education at the University of Arkansas School of Medicine where he graduated in 1917.

He was a general practitioner in Tulsa for 33 years before his retirement in 1951.

In recognition of his years of dedication to the medical profession, the Oklahoma State Medical Association presented Doctor Henderson with a Life Membership in 1951.

Reuben Worrell Williams, M.D.
1878-1961

Memorial services were held for Reuben Worrell Williams, M.D., former Anadarko physician on January 25, 1961 in Phoenix, Arizona.

A native of Bloomington, Illinois, Doctor Williams graduated from Rush Medical College in Chicago in 1906. After two years of practice in Galva, Illinois, he came to Anadarko in 1910, where his practice was interrupted only by his service during World War II. In 1951, he retired and moved to Evergreen, Colorado.

Doctor Williams was honored for his service to the medical profession when the Oklahoma State Medical Association presented him with a Life Membership in 1951.

Albert Loeb Salomon, M.D.
1889-1961

Albert Loeb Salomon, M.D., one of Oklahoma's earliest pediatricians, died in Norman on February 13, 1961.

Born in Vinegrove, Kentucky in 1889, Doctor Salomon graduated from the University of Louisville School of Medicine in 1910. He had practiced in Oklahoma City from 1919 to 1957.

Doctor Salomon was a Diplomate of the American Board of Pediatrics and a member of the American Academy of Pediatrics.

Doctor Salomon was honored in 1957 when OSMA awarded him a Life Membership in appreciation for his years of service to the medical profession.

John H. Lamb, M.D.
1905-1961

John H. Lamb, M.D., 55-year-old Oklahoma dermatologist and prominent civic worker, died in Baltimore, Maryland, February 23, 1961.

Born in Manila, Philippine Islands, Doctor Lamb came to Oklahoma with his family in 1917. After graduating from the University of Oklahoma School of Medicine in 1932, he took postgraduate work in Johns Hopkins and the Skin Cancer Hospital in New York City.

In addition to being one of the founders of the Oklahoma Medical Research Foundation, Doctor Lamb was a past president of the American Dermatological Association and the American Academy of Dermatology and chairman of the Department of Dermatology at the Oklahoma University Medical Center.

A music enthusiast, Doctor Lamb had served as president of the Oklahoma Symphony Society.

Auxiliary News

D. S. C. for Annis

If D. S. C's were awarded by the AMA, our recommendation should be for Edward R. Annis, M.D., whose name was unfamiliar to many of us until the recent Reuther TV handicap. For those auxiliary members and their husbands who missed the telecasts, we sincerely hope there will be a re-run. Doctor Annis' unusual abilities can be recognized in the January *Bulletin* article: *Woman's Auxiliary Role in Political Action.*

With poise, obvious intelligence and polish, this outstanding gentleman represented the medical viewpoint with quiet dignity, in spite of crude tactics and muddled untruths expounded by the self-styled "champeen of the peepul."

Throughout the years we have been urged as a group to become knowledgable in many fields. For the past several—and obviously for the future—years, concentrated effort must be made, not only to keep up with what is going on, but to be further prepared for any eventuality.

How can we become informed and simultaneously anticipate the legislative future? This is no small task, but it can be done and it can be interesting and rewarding. Each of us must inform our government representatives and convince our neighbors and friends to do likewise. This is a good beginning. And of course, each of us has acquired the emergency-contact habit by now. These things are basic.

Information Silo

Our county Legislation Chairman can offer us much. But some counties are small organizations, without such chairmen—here lies added need for even greater individual responsibility in gaining and compiling information. Following are some suggestions. Whether your membership is large or small, you may find them opening new lines of valuable thought:

1. Each auxiliary member can be a self-appointed speaker's bureau. How? Resolve to know as much as you can in regard to every point involved. Study the text of President Kennedy's special message to congress on health and hospital care, for example. Examine each point. Is this logical or illogical? Why? If you feel a bit insecure or vague when you reach some areas—then truthfully admit to yourself that you need to do some research on medical care costs, where the hospital dollar goes, just what voluntary health insurance accomplishes. Your own good judgment is the best background you can have.

2. Remember that you will not be talking with someone who feels as you do. Take a lesson from Doctor Annis: persuasion by personal conviction is effective only when and if we use intelligence coupled with patience. For most of us this is indeed difficult under present circumstances.

3. Accumulate a file on all related data. Study every scrap of material for and against welfare medicine. For example, *U. S. News and World Report,* February 6, contains a chart on new patterns in people's spending. A person comments: "I notice medical care has risen 22% since 1955." Be prepared for this casual reader who saw only what she was looking for. Tactfully call to her attention her obvious mis-reading; also mention that recreation, tobacco and liquor are almost equal on actual money spent, aren't they? Wonder with her if the $18.00 average spent by every family every month for over-the-counter laxatives, headache remedies, etc., are included in this statistic. What about the million spent on quack cancer and arthritic cures—the "guaranteed results" boys—do you suppose they, too, are included?

4. Now for finesse. Try to imagine with your inquirer a future based on public education: can you foresee, and help your verbal adversary imagine, that with her concerted help, too, we can educate people to channel these millions of dollars spent foolishly into their own voluntary health programs and insurance, into constructive care for the aged, based on need?

PHYSICIAN PLACEMENT

Anesthesiology

Richard S. Dillman, M.D., 529 Fifth Street, Ann Arbor, Michigan; age 35; married; University of Michigan, 1956; board eligible.

General Practice

Frank Augustus Bautz, M.D., 265 Concord Road, Sudbury, Massachusetts; age 46; married; Harvard Medical School, 1942; board eligible; eligible Summer 1961.

Floyd E. Webb, Jr., M.D., 2527 Webster Drive, Alexandria, Louisiana; age 27; married; University of Oklahoma, 1957; available August, 1961.

E.E.N.T.

August L. Stemmer, M.D., 20th Station Hospital, APO 696, New York, N.Y.; age 32; married; Harvard Medical School, 1953; board certified; Available May 1, 1961.

Industrial

Frederic O. Epp, M.D., 110 West 6th, Augusta, Kansas; age 54; married; University of Kansas, 1938; desires industrial or governmental work; available immediately.

Internal Medicine

Spencer E. Berry, M.D., 13630 Flynn, Le Puente, California; single; University of Oklahoma, 1950; board eligible; available now.

James Stanford Haimsohn, M.D., 3340 Poplar Avenue, Memphis, Tennessee; age 43; married; University of Tennessee, 1942; board certified; available 90 days.

Sam A. Kinard, Jr., 3522 E. 17th Avenue, Denver 6, Colorado; age 29; married; Baylor University of Medicine, 1956; 2 years medical residency and 2 years cardiology residency; available July, 1961.

Allen Bert Malnak, 1015½ Brown Street, Evanston, Illinois; age, 32; married; University of Illinois, 1954; board eligible; available June or July, 1961.

George F. Winks, Jr., 217 S. Boulevard, Apt. 1, Richmond, Virginia; age 28; married; Medical College of Virginia, 1957; board eligible; available July 1, 1961.

Obstetrics and Gynecology

Philip Tabor Bennett, M.D., Quarters 739A, Maxwell A.F.B., Montgomery, Alabama; age 31; married; University of Texas Medical School, 1954; board eligible; available July 1961.

Walter G. Crowe, M.D., Mercy Hospital, Pride 4, Locust St., Pittsburgh, Pennsylvania; age 39; married; University of Tennessee College of Medicine, 1955; board eligible; available March 10, 1961.

Richard W. Fenaughty, M.D., 95 Hart Street, New Britain, Connecticut; age 31; married; State University of New York, 1957; available July 1961.

Milburn W. Hobson, M.D., 2011 West 39th, Kansas City, Kansas; age 30; married; Kansas University, 1955; available July 1, 1961.

Michael Lado, M.D., 999 Monroe Ave, Apt. 707, Memphis, Tennessee; age 31, married; University of Pittsburgh, 1955; available July, 1961.

Robert B. Williams, M.D., 27 Normandy Road, Auburndale 66, Massachusetts; married; age 30; Tulane University, 1955; board certified; available July 1, 1961.

Orthopedics

Sheldon Roger, M.D., 1185 Holly Street, Denver, Colorado; age 31; married; Indiana University, 1953; board eligible; available July 1, 1961.

George Walter Shaw, M.D., 6135 Walmer, Mission, Kansas; age 32; University of Texas, Southwestern Medical School, 1953; available, December, 1961.

Emmet J. Thorpe, M.D., 6811 Stockton Drive, Knoxville, Tennessee; age 32; married; George Washington University School of Medicine, 1951; board certified; available immediately.

Psychiatry

William L. Sherman, Jr., M.D., 201 East Kirby, Detroit 2, Michigan; age 38; single; Wayne State University College of Medicine, 1947; board eligible; available immediately.

Mary Eichhorn, M.D., 501 Fourth Street, Garden City, Kansas; age 38; single; University of Kansas, 1945; board certified; available immediately.

Preventive Medicine

Robert E. Jewett, M.D., 2820 Fairway Drive, Birmingham, Alabama; age 52; widower; Indiana University, 1934; board certified; desires administrative practice; available immediately.

Radiology

Quentin T. Brooks, M.D., 6922 Edgemoor Drive, Houston, Texas; age 40; married; Oklahoma University School of Medicine, 1953; board certified; available immediately.

Fred T. Hargrove, M.D., 217 North Pinewood Drive, Carthage, Texas; age 56; married; University of Oklahoma School of Medicine, 1934; board certified; available January 1, 1961.

Surgery

David S. Bachman, M.D., 301 North 2nd St., Allentown, Pennsylvania; age 38; married; University of Buffalo, 1947; board certified general surgery; specilaty, broncho-esophagology and thoracic surgery; available immediately.

Morley Barsky, M.D., 12 Rosseau Road, Apartment 102, Downsview, Ontario, Canada; age 30; married; University of Manitoba, Winnipeg, Canada, 1955; available July 1, 1961.

Richard Harrod Blank, M.D., 2603 Willard Drive, Charlottesville, Virginia; age 32; married; Cornell University, 1953; board eligible; available July 1, 1961.

James Steward O'Hare, M.D., 104 West Madison, Baltimore, Maryland; age 39; married; University of Maryland, 1946; board certified; available immediately.

John William Heizer, M.D., 214 S. Huntington Avenue, Jamacia Plain (Boston), Massachusetts; age 32; married; Tufts University School of Medicine, 1956; board eligible; available July 1961.

Harry Houghton, M.D., 7223 W. Lakefield Dr., Milwaukee 19, Wisconsin; age 30; married; Western Reserve University, 1956; board eligible; available July 1, 1961.

John Mauver Kearney, M.D., 1036 Mt. Vernon Ave., Marion, Ohio; age 34; married, University of Pennsylvania, 1954; board eligible; available immediately.

David K. McAfee, M.D., 2560 McCurdy Way, Decatur, Georgia; age 32; married, Northwestern, 1953; board eligible; available July 1, 1961.

Thomas Roy Murphy, M.D., 718 West Cherry Street, Cherokee, Iowa; age 30; married, Dalhousie Medical School, Halifax, Canada, 1956; board eligible; available immediately.

LETTER TO THE EDITOR

To the Editor:

Reference is made to the editorial in the *Journal* of the Oklahoma State Medical Association of January, 1961, page 1, and signed H.T.R. (Henry T. Russell, M.D.).

I sincerely agree with the ideas expressed in this editorial. I would like, however, to suggest that the practice of medicine is becoming less attractive for another reason. The threat of further supervision of schools and of the practice of medicine itself by the federal government is an important factor. To me it seems the only way we might be able to correct this situation is to stop federal legislation which is designed to further increase the participation of the federal government. This cannot be done by the American Medical Association alone. It should challenge and secure the active interest of every medical doctor.

Very truly yours,
CLINTON GALLAHER, M.D.

25 YEARS AGO

Articles published in *The Journal* of the Oklahoma State Medical Association, March, 1936.

Urological Methods in the Treatment of Nephritis

Basil A. Hayes, M.D., F.A.C.S.
Oklahoma City

I submit for your consideration that the medical men need assistance in the treatment of nephritis. Their weapons of attack are supportive stimulants, dietary management, and diuretic drugs. These methods are likewise employed by the urologists with the addition that the urologists attempt to arrive at the specific predisposing cause of the condition and relieve it. The correct analysis and treatment of any case of kidney disease unquestionably leads to the cystoscopy and x-ray because this is the only way it can be properly done. Intravenous urography is many times incomplete and in many instances actually leads to fallacious conclusions. The cystoscope tells the story of the entire urinary tract and enables us to make proper pictures showing the condition of the kidney in a way which no other method will approach. It is likewise a therapeutic instrument and can be used to relieve the obstruction even as a bronchoscope is used in the relief of obstruction in the respiratory tract. Without using it the physician seeing a condition of kidney disease cannot possibly determine with any degree of accuracy whether his patient's anemia, hypertension, edema, nitrogen retention, pyuria, hematuria, or albuminuria are due to a so-called glomerulonephritis or to a back pressure nephrosis which causes symptoms of this same kind. It would seem logical, therefore, that all cases of kidney disease should be referred to a competent urologist first, then if he finds there is need for medical or obstetrical consultation, he can call for it.

During the past three years I have demonstrated in a series of more than eighty cases of toxemias of pregnancy that in every instance there is a very definite back pressure of urine and that this back pressure is merely giving rise to the symptoms of nephritis which are commonly seen in other conditions. I have also shown that relief of the back pressure relieves the toxemia, therefore feel that I am on safe ground when I say that virtually every toxemia of pregnancy is a back pressure phenomenon and should be so treated.

MISCELLANEOUS ADVERTISEMENTS

VACANCIES—1 General Surgeon, 1 Internist and 1 Admitting Physician for 390 bed Veterans Administration Hospital; Board Certified or Board eligible preferred for surgeon and internist; prefer Oklahoma licensure; salary range $7,560 to $15,030 depending upon quualifications; plus 15% additional if Board Certified, not to exceed $17,200; fringe benefits; citizenship required; preceptorship in General Surgery available. Write: Manager, Veterans Administration Hospital, Muskogee, Oklahoma.

WANTED: Internist to join old established group in town of 10,000 population in West Texas. Need not be Board certified but with adequate residency training. Write Key A, THE JOURNAL, Oklahoma State Medical Association. P.O. Box 9696, Oklahoma City, Oklahoma.

OKLAHOMA CITY office space available in Medical Center with dentist and pharmacy. 2312 N.W. 23rd St., across the street from new $12,000,000 shopping center on Shepard tract. Private entrance, 415 square feet floor space, off-the-street parking. Contact James R. Ricks, M.D., 2316 N.W. 23rd St., JA 5-7438.

FOR SALE: Two practically new matching Hamilton Examining Tables, two treatment cabinets, two stools, two lamps, walnut desk with matching swivel chair, and two side chairs. Contact Frank H. Cooper, M.D., 502 South Crawford, Norman, Oklahoma, phone JEfferson 4-5322 or JEfferson 4-6644.

WANTED: Surgeon to join old established group in town of 10,000 population in West Texas. Need not be Board certified but with adequate residency training. Write Key A, THE JOURNAL, Oklahoma State Medical Association, P.O. Box 9696, Oklahoma City, Oklahoma.

HOUSE PHYSICIANS NEEDED immediately for Tulsa's new St. Francis Hospital. Contact Key A, The Journal of the Oklahoma State Medical Association, P.O. Box 9696, Oklahoma City, Oklahoma, for further information.

WANTED: Old and antique medical books in pediatrics and neurology. Contact Lucius Waites, M.D., Department of Pediatrics and Neurology, University of Oklahoma Medical Center, Oklahoma City.

FOR SALE: One Hamilton Examining Table (1960 model), 6 months old. Like new. Contact C. P. Taylor, M.D., 1201 East 5th, Ada, Oklahoma, FE 2-4424.

OPPORTUNITY for General physician in Cement, Oklahoma. One other World War I veteran doctor presently practicing there. Office vacancy in the center of town across from the drug store in farming and oil community with nearby hospitals at Anadarko, Chickasha, Lawton and Cyril. If interested, contact Wade H. Vann, M.D., Cement, Oklahoma.

R.N.—experienced in Convalescent Hospital or Nursing Home administration. Capable of organizing new place as to detail of licensing, etc. Capable of evaluating facility already in operation. Available for interview with doctor interested in investing in profitable and needed project. Call GA 7-0571, Oklahoma City or write 5504 North Terry, Oklahoma City.

TINKER Air Force Base, Oklahoma, has vacancies for two Medical Officers, GS-13, $11,155 per annum. One is in the General Medicine and Surgery field, involving duties in the Out-Patient Clinic of the Base Hospital—new and modern building and facilities. This position could be utilized on swing shift (approximately 4:00 p.m. to midnight) if preferred. The other position is in the Occupational Health and Medicine field, but strictly a day-shift operation.

These positions are strictly 40-hours per week, with no "night calls." Doctors may continue private practice, during off-duty hours, as long as it does not interfere with their attendance and performance of duties at the Base. They may not accept or continue employment resulting in payment from the City, County, State, or other Federal agencies, due to dual compensation laws. Salary is increased by $260 per annum each eighteen months to a maximum of $11,935 per annum.

Qualification requirements for these positions and information about fringe benefits, such as retirement, may be obtained at any first or second class post office or through the Employment Branch, Tinker AFB, PE 2-7321, Extension 2691.